

HORSHAM DISTRICT COUNCIL

Carbon Reduction Target Setting
and Action Plan Support

August 2020



Horsham
District
Council



CONTENTS

01

Context

02

Footprint Review

03

Setting a target

04

Action Plan

05

Appendices

INTRODUCTION

In June 2019, Horsham District councillors acknowledged in a notice of motion strong scientific evidence and growing public concern about a wide range of damaging environmental matters, including a climate emergency. They committed to developing a plan of practical changes they can implement to work towards a net zero carbon target.

Report Overview:

As part of delivering that commitment, this work has been commissioned by the Carbon Reduction Project Team at Horsham District Council to support their carbon reduction planning.

- **Chapter 1** provides the context and drivers for action.
- **Chapter 2** reviews the Council's 2018/19 footprint and the associated accounting principles.
- **Chapter 3** explores different methods for setting a carbon reduction target and the implications of each approach.
- **Chapter 4** provides recommended actions, in line with the agreed target, and includes an estimation of cost and carbon savings.

Objectives:

This will help Horsham District Council to:

- 1) Identify key emission sources to target action and assess what emissions to include in the target.
- 2) Assess the implications of different target setting methods and make an informed and evidence-based decision on the most suitable target for the Council.
- 3) Identify key actions necessary to reach the agreed target and use the cost benefit analysis to inform implementation.

Scope:

This report is primarily focused on Horsham District Council's own organisational emissions as a starting point for encouraging further emission reduction activities in the district.



NAVIGATING THE REPORT

Terminology

Throughout this report emissions are defined in units of tonnes of carbon dioxide (CO₂) or carbon dioxide equivalent (CO₂e). One tonne of CO₂ is roughly equivalent to:



40 return trips by car from Horsham to London



1 passenger flying from Gatwick to Chicago



Burning 1-2 bathtubs' worth of crude oil

CO₂e allows the comparison and inclusion of other GHGs (e.g. nitrous oxide and methane) as well as carbon dioxide. It represents the corresponding amount of carbon dioxide that would be required to produce the same level of global warming as these other GHGs.

Key definitions

The report frequently references the following terms defined below. A full list of definitions can be found in Appendix 1.

Decarbonisation - the process of changing our activities and industries to create an economy that sustainably reduces emissions of carbon dioxide.

'Carbon neutral' or 'net zero' emissions - These two terms typically mean the same thing; while emissions have been reduced overall, residual GHG emissions (e.g. those from industry and/or freight transport) are then offset through carbon dioxide removal from the atmosphere. See Chapter 3 for further discussion.

Offsetting - Carbon offsetting refers to the purchase of a tradeable unit, representing emissions rights or emissions reductions, to balance the climate impact of an organisation, activity or individual. Although they can be stored and traded like a commodity, they are not material things; offset credits are not literally “tonnes of carbon” but stand in for them and are better regarded as intangible assets or financial instruments. To act as an offset, units must be cancelled to represent a reduction and prevent further trading.

01 Context



01 – CONTEXT

CALL TO ACTION

A growing consensus

It is now widely agreed that climate change poses an urgent and unprecedented threat and that action is required across all aspects of society. The recognition of urgency is no longer just the message from environmental groups but is now being reiterated across a variety of sectors:

- **UK Local Authorities:** The majority of Local Authorities in the UK have now declared a climate emergency, including several neighbouring authorities to Horsham.
- **UK Climate Strike action:** Fridays for the Future and global climate strikes have led to unprecedented levels of support for climate action. Over 150 people attended a [climate strike](#) in Horsham in September last year.
- **Increased media profile:** The strike action has been mirrored in the media with enhanced scrutiny and coverage on climate related issues.
- **Global Businesses:** Nearly 800 companies globally are setting [Science Based Targets](#). As part of the lead up to COP26, the campaign '[Race to Zero](#)' was launched across businesses, cities and nations.

The next few years will be pivotal for climate change mitigation. The urgency of the situation is growing as we approach planetary tipping points and are held to account as a nation against international climate targets. There must be a decade of unprecedented and disruptive action if we are to limit dangerous temperature rise.

Dangerous Impacts

[UKCP18](#) is the latest generation of national climate projections for the UK which helps to predict the changes that will occur in the UK with future climate change. The main trends from the projections are increased chance of warmer, wetter winters and hotter, drier summers along with an increase in the frequency and intensity of extremes.

This is likely to pose a significant economic, social and environmental threat to the UK and Horsham. Horsham has already experienced significant disruption from extreme weather this winter e.g. Storm Ciara in February led to West Sussex highways team having to respond to nearly [150 emergencies](#) in the 24 hours following the storm.



01 – CONTEXT

CLIMATE CHANGE AND COVID-19

The global disruption and impacts of the COVID-19 pandemic have forced governors, citizens and businesses to radically reassess their policy decisions, lifestyles and the ways in which they operate.

During the peak of the lockdown in April 2020, [scientists](#) observed a global daily emissions decrease of around 17% compared to 2019 levels. Nearly half these changes came about due to a reduction in surface transport usage brought about by government policies designed to encourage citizens to stay at home. The consensus is that the emissions reductions seen are inherently linked the economic crisis brought about by government responses to Coronavirus. This reduction is temporary and could be reversed in line with any economic recovery, if the right policy measures are not put in place to ensure a “Green Recovery”.

A Green Recovery

The cost of delaying action on the pandemic has been felt in many countries. Similarly, decisiveness will be required as we recover from this crisis, responding in a way that is centred around the resilience, health and wellbeing of local communities. UN Secretary General Antonio Guterres acknowledged this in a statement in April 2020: “... *ensuring a future for the planet must be a core element in rebuilding society after lockdown measures are lifted*”.

To maintain the prospect of meeting the commitments set out in the Paris Agreement, it is essential the government policies in response to the economic crisis avoid locking nations into carbon intensive pathways, and instead steer economies towards a resilient, green recovery. In May 2020 the [Committee on Climate Change](#) called for government to use the economic recovery as an opportunity to accelerate the shift towards a low-carbon economy. This will stimulate jobs, improve future economic resilience, and reduce climate related risks. [Business](#) and [health](#) professionals are also making similar calls.



01 – CONTEXT

COVID 19- MAINTAINING AMBITIONS

The ongoing lockdown offers the chance to reflect on the way that we operate as a society. This time also presents the opportunity to shift our collective values and review the demands of “emergency action” in a climate context. Local and national commitments to emissions reductions have not changed as a result of the COVID-19 crisis.

What does COVID-19 mean for Horsham District Council’s climate change ambitions?

On the surface, Coronavirus dominates decision making, and some local authorities have seen resources usually allocated to the climate emergency shift focus. Revenues may also have been effected, and social distancing measures can present barriers to public consultation on climate action planning measures. But the prospect of a Green Recovery also presents a number of short and long term opportunities for climate action, particularly if decision makers can build on the behavioural and economic changes ushered in by our response to the pandemic.

Local Impacts

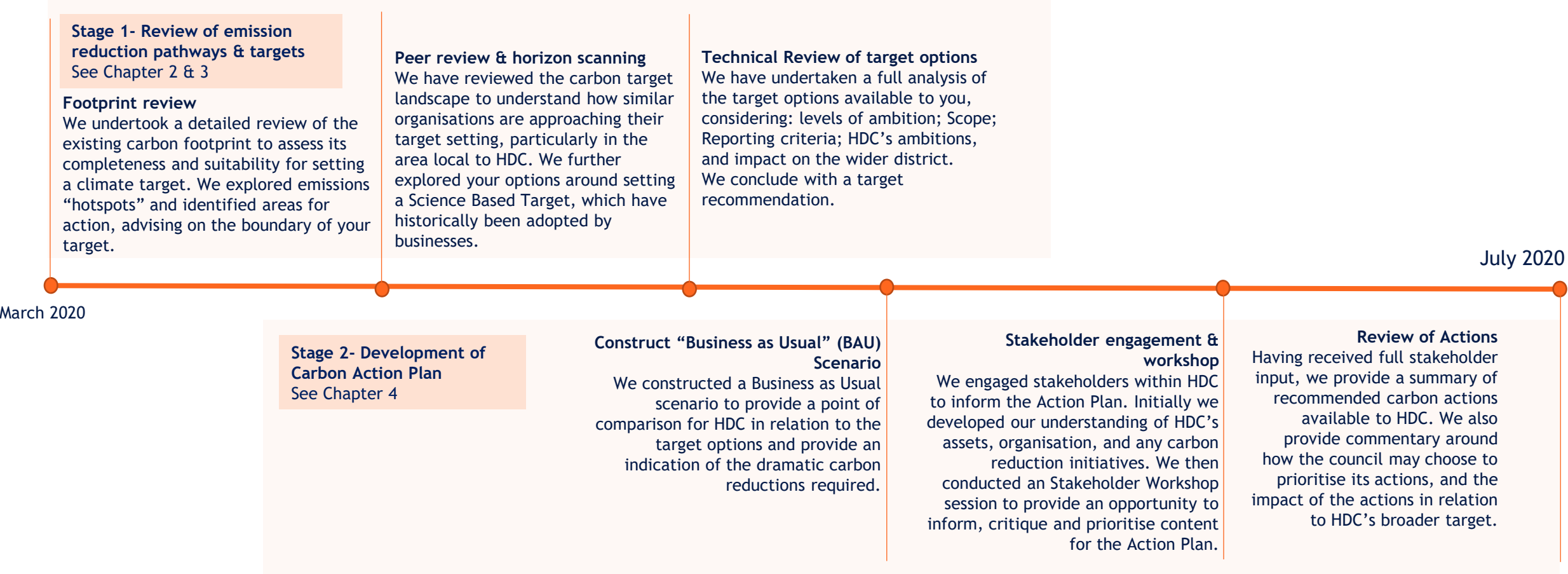
When building the action plan, we have found evidence that the pandemic, and the response to it, presents a number of opportunities to further embed climate action at HDC and in the wider district. These include:

- **Homeworking-** New restrictions on office working have created a rapid shift in perception of working from home. Further research is needed, but this could present a substantial opportunity to reduce impacts associated with office spaces and commuting. Similarly, increased working from home presents an opportunity to encourage home retrofits and renewable energy generation.
- **Pedestrianisation & cycle lanes-** Some regions are seizing this opportunity to create wider cycle lanes and walking spaces.
- **Low employment-** The economic challenges ahead are expected lead to record low employment. Gatwick airport, for example, has seen 100s of job losses associated with ground staff, baggage handling, and flight staff. Investing in the low carbon economy presents a viable opportunity for upskilling and job creation.
- **Lobbying National Government-** As policy makers shape the economic recovery, local government is in a unique position to influence government policy in the pursuit of a green recovery. In turn, this could stimulate low carbon activities across the district.

01 – CONTEXT

PROCESS

Commencing in March 2020, Anthesis undertook the work in two closely linked stages:



02 Council Profile and Footprint



DRAFT

02 – COUNCIL PROFILE & FOOTPRINT

A) COUNCIL PROFILE

This report is focussed on the emissions associated with Horsham District Council’s own operations. Here we provide a profile of the district council, and an overview of its 2018/19 carbon footprint.

02 – COUNCIL PROFILE AND FOOTPRINT

HORSHAM DISTRICT COUNCIL PROFILE

The Council’s 2019 motion relates to reducing the emissions from the council at an organisational level, not for the district. Therefore, this report is focused primarily on the actions Horsham District Council can undertake within their own operations.

Horsham District Council is a Second-Tier Authority which shares service provision with West Sussex County Council. It is the second largest Local Authority in the County and provides over 130 services to local residents.

Metric	Description
Number of staff	460
Fleet size	63 vehicles
Functions / Services	<ul style="list-style-type: none">• Cars and on-street parking• Household waste collection and recycling• Street cleaning• Planning and building control• Environmental health• Parks and countryside• Providing local culture, leisure and sporting facilities
Building portfolio	<ul style="list-style-type: none">• Council offices and workshops• Theatre• Museum• Mixture of commercial and residential property



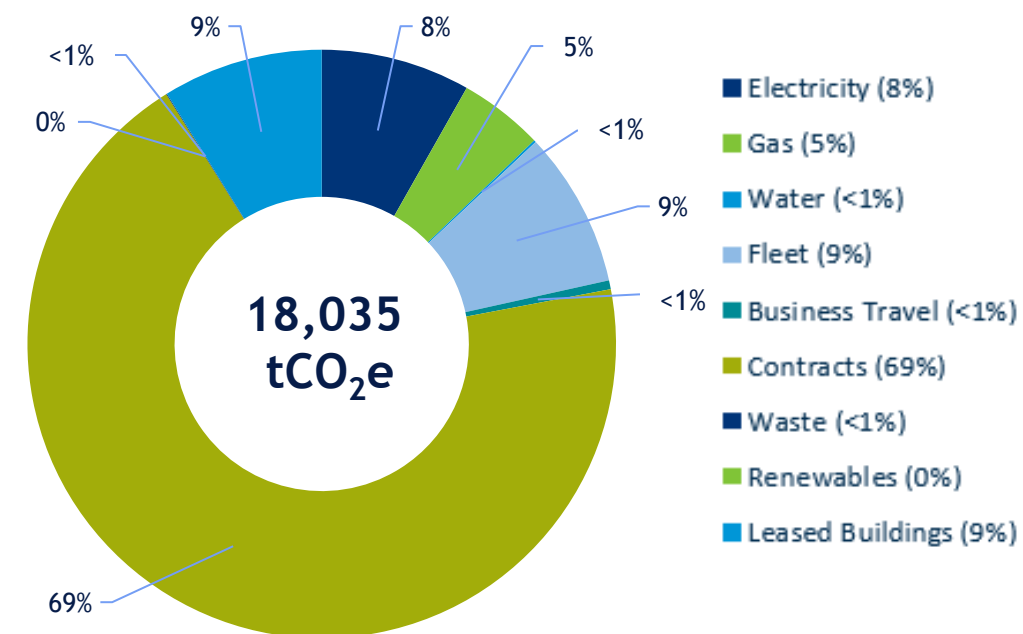
02 – COUNCIL PROFILE AND FOOTPRINT

2018/19 FOOTPRINT RECAP

Key Findings

The Carbon Trust were commissioned in 2019 to complete a carbon footprint of Horsham District Council’s Scope 1, 2 and 3 carbon emissions for the 2018-19 financial year. The report is available [here](#). The key findings were as follows:

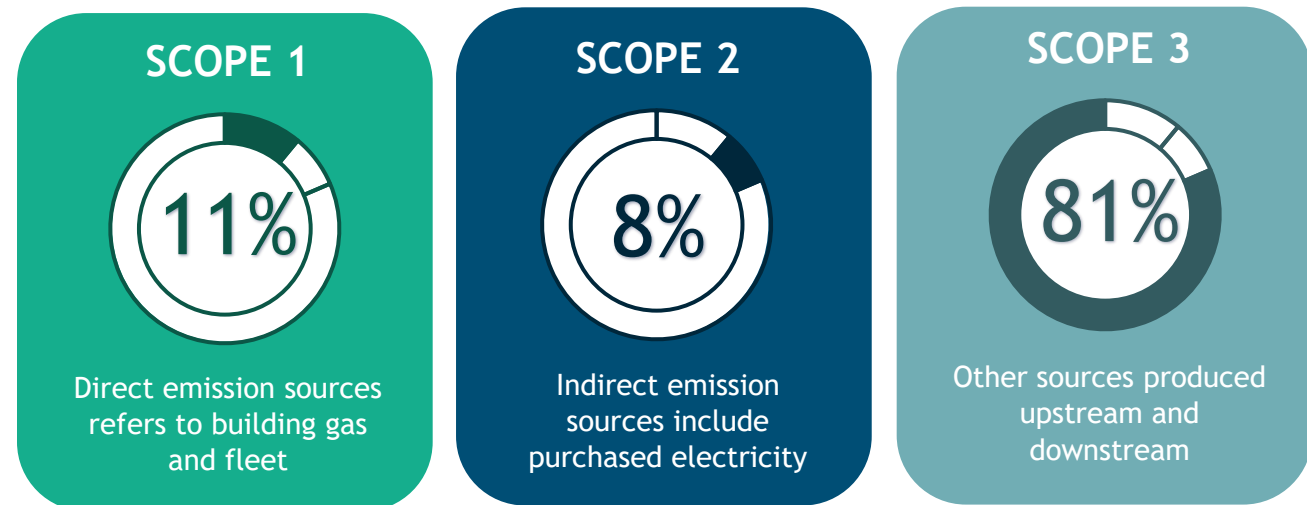
- The largest sources of emissions, accounting for 78% comes from leased buildings and contracts.
- The remaining significant sources include gas and electricity used in council buildings and council fleet.
- The vast majority of emissions (81%) fall under the Scope 3 category.



Gaps in Data

The Carbon Trust report also outlines any gaps in available data:

- Business travel - data available for staff and leased vehicles only.
- Capital goods - data not available.
- Upstream transportation and distribution - data not available.
- Employee commuting - data not available.
- Franchises - no franchise available .
- Investments - out of scope.



02 – COUNCIL PROFILE & FOOTPRINT

B) FOOTPRINT REVIEW

We have conducted a review of Horsham District Council's 2018/19 footprint to assess its suitability for use in setting a carbon target moving forward.

In this section we:

- Define what emissions should be included in the target.
- Assess the completeness of the footprint for basing a long term target on.
- Assess the methodology and data gaps in relation to the SBTi criteria.
- Consider the significance of land owned and managed by the Parks and Countryside team in the district.

02 – COUNCIL PROFILE AND FOOTPRINT

FOOTPRINT REVIEW

Understanding what emissions to include in the target

In measuring a carbon footprint and setting a carbon target, it is important to follow internationally accepted accounting standards. The GHG Protocol Corporate Standard provides standards and guidance for companies and other types of organisations. Following this standardised approach increases accuracy and consistency between reporting, and reduces costs.

The GHG Protocol provides the definitions of GHG Scope which underpin this reporting. Emissions are pooled into either Scope 1, Scope 2, or Scope 3, to separate direct and indirect emissions and help organisations to shape policies and targets based on their organisational structures and ability to influence. Organisations may also further sub-divide emissions within scopes to assist targeting their emissions reduction activities.

	<u>GHG Protocol</u> Definition
Scope 1	Direct GHG emissions occur from sources that are owned or controlled by the organisation, for example, emissions from combustion in owned or controlled boilers, furnaces, vehicles, etc.
Scope 2	Accounts for GHG emissions from the generation of purchased electricity consumed by the organisation. Purchased electricity is defined as electricity that is purchased or otherwise brought into the organisational boundary of the company. Scope 2 emissions physically occur at the facility where electricity is generated.
Scope 3	All other indirect emissions. Scope 3 emissions are a consequence of the activities of the organisation, but occur from sources not owned or controlled by the organisation. Some examples of scope 3 activities are extraction and production of purchased materials; transportation of purchased fuels; and use of sold products and services.

02 – COUNCIL PROFILE AND FOOTPRINT FOOTPRINT REVIEW

Choosing your Scope 3 ambition

Scope 3 is an optional reporting category. Whether you choose to set a target in your Scope 3 emissions can depend on:

- **The type of climate target you wish to set-** when setting a Science Based Target, it is mandatory to set a Scope 3 target if your Scope 3 emissions constitute over 40% of your emissions. To make this judgement necessitates undertaking a full GHG Inventory.
- **Your organisational ambitions-** setting a Scope 3 target signals an intent to influence activities outside your direct control, in your value chain. This can have a number of benefits, including improved supplier performance and reduced costs.

Setting a boundary & considering your influence

GHG Protocol guidance states that organisations should prioritise emissions reduction activities in the value chain where there is the potential to influence GHG reductions.

If an organisation wishes to set a Scope 3 target, it is therefore important to make an informed judgement on its boundary.

Later in this chapter, we further explore your footprint boundary and ability to influence your wider value chain. In Chapter 3, we bring these learnings together to provide a target recommendation.



02 – COUNCIL PROFILE AND FOOTPRINT

FOOTPRINT REVIEW

Data gaps

Alongside reviewing what emissions to include in a target, it is important to assess the quality and completeness of the footprint before setting a long-term target and ensure there is transparency in why some emission sources may not be included.

Challenges with procurement emissions estimates

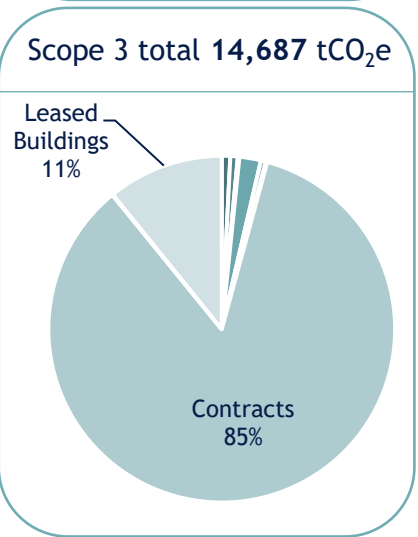
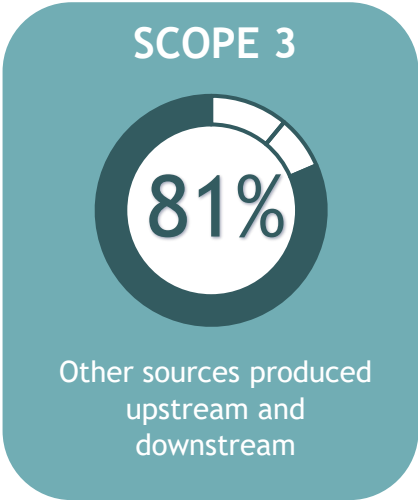
During engagement with key stakeholders, an issue was raised with the annual procurement spend totals that had been used in the 2018/19 carbon footprint data. Some annual procurement costs were identified as representing the total contract value rather than the annual and therefore would be an overestimate. The council will re-calculate emissions from this sector and values may change, however the initial target-setting process will be focused on emission sources within direct control and most recommendations will still be applicable despite the change in value. This should be updated before formally agreeing a target.

SBTi requirements

If the council opt for a more rigorous target setting approach, it is important that it meets certain criteria in line with the Greenhouse Gas Protocol. Some general principles of the science-based target initiative include:

- Organisation-wide scope 1 and 2 emissions should be calculated and no more than 5 percent of their aggregate scope 1 and 2 emissions from inventory and targets should be excluded.
- Organisations should calculate emissions from the scope 3 sources at which they have the potential to influence GHG reductions but should not exclude any activity that is expected to contribute significantly to their total scope 3 emissions
- The reason why specific operations and sources have been excluded should be disclosed

With the exception of the procurement point above, there are some emissions sources which have been excluded in the 2018/19 footprint but these are in line with criteria which details how and why data may be included/excluded.



02 – COUNCIL PROFILE AND FOOTPRINT FOOTPRINT REVIEW

Parks & Countryside

Well managed green space is primarily considered a carbon sink due to its role in sequestering and storing carbon. Following the Greenhouse Gas Protocol, the carbon footprint of HDC's operations does not account for the impact of the district's Parks and Countryside on the wider footprint. In this report we provide commentary on the role of the Parks and Countryside in Horsham District Council's control, and their potential contribution to achieving its carbon target.

Why is this important?

Carbon offsetting offers a means through which the council can address any "Gap to Target" (i.e. residual emissions). Such gaps are often identified when reviewing the impact of a planned set of emissions reduction initiatives against a target. In the context of HDC's Park and Countryside, natural climate solutions could serve as options for 'offsetting'. These include tree and hedgerow planting, but also grassland, pasture, heathland and soil management. Undertaking a full assessment of your potential for action in this area would be the first step to action.

In exploring offsetting opportunities, HDC should prioritise those within the boundaries of the district (as opposed to out-of-boundary investments which could be more expensive and may be harder to justify in terms of public spending). Taking such action also offers several co-benefits in the district, including clean water; biodiversity; recreation; water flow regulation and flood mitigation.

Emissions reductions should be prioritised

Offsetting offers great potential for contributing to your net carbon reductions. Nevertheless, for reasons of impact, speed and cost, actions which prioritise reduced energy consumption and decarbonisation of energy supply should be prioritised. This is explored further in Chapter 4.



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02 – COUNCIL PROFILE & FOOTPRINT

C) EMISSIONS ANALYSIS

Building on our review of Horsham District Council’s footprint, we have further analysed the emissions profile to confirm “hotspots” to target during the Action Plan. Here we:

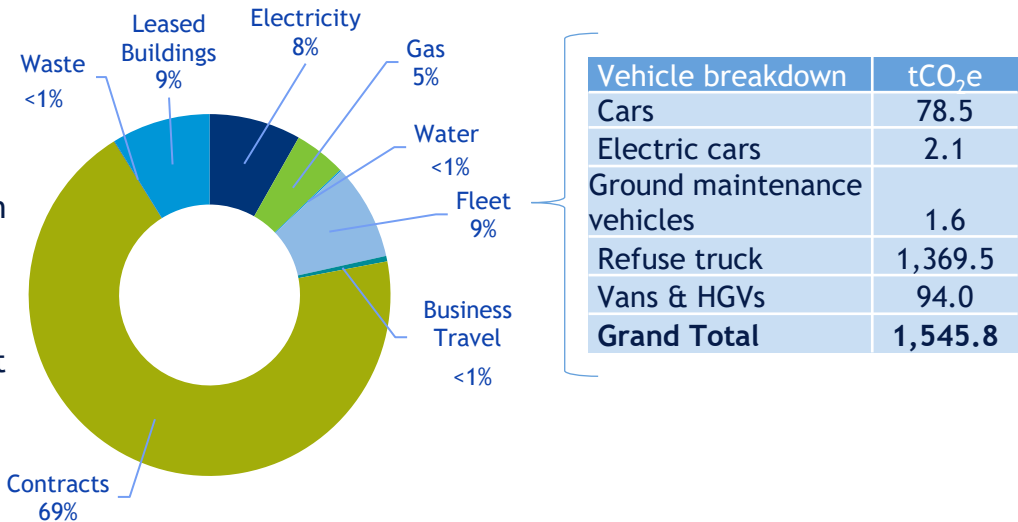
- Provide a further review of emissions sources after a “re-jig”, to help focus action planning priorities.
- Evaluate the criteria for boundary selection in line with published guidance.
- Assess your footprint in terms of your ability to influence in the district, and outside it.

02 – COUNCIL PROFILE AND FOOTPRINT

EMISSIONS ANALYSIS

Footprint re-classification

Anthesis worked with officers to further categorise certain emissions sources in order to directly relate to carbon reduction activities in the action plan. For example, the data behind the fleet estimation was re-presented by vehicle type in order to more specifically target action. The categories have also been presented in terms of scope (see right)



Data additions

Commuting - Given the increased awareness and opportunities to increase working from home at present, an estimate of emissions from commuting has been provided in order to allow an estimation of savings related to this.

Method: In the absence of data collected by HDC on staff travel, data from the 2018 National Travel Survey was scaled down to Horsham based on the number of employees.

2018/19 Commuting:
316 tCO₂e

Emissions Source	2018/19
Scope 1	1,983
Gas	735
Fleet	1,248
Scope 2	1,365
Electricity	1,363
EV Fleet	2
Scope 3	14,687
Electricity T&D	116
Gas Upstream	102
Water	21
EV Fleet (T&D)	0
Fleet (WTT)	295
Business Travel	70
Business Travel (WTT)	18
Contracts	12,466
Waste	8
Leased Buildings	1,590
Commuting	316
Grand Total	18,351

Glossary (DEFRA, 2019)

WTT: ‘Well-to-tank (WTT) fuels conversion factors should be used to account for the upstream Scope 3 emissions associated with extraction, refining and transportation of the raw fuel sources to an organisation’s site (or asset), prior to combustion.’

T&D: ‘Transmission & Distribution (T&D) factors should be 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 organisations that purchase it).’

02 – COUNCIL PROFILE AND FOOTPRINT EMISSIONS ANALYSIS

Accounting boundaries

Why are boundaries important?

Accounting boundaries can determine where and how HDC exercises their influence over emissions. Without appropriate consideration, this could lead to a situation where emissions ‘fall between the cracks’ and no party takes account of emissions. For example, a tenant states they just rent the building and the council states they lease it out, and neither recognise the emissions in Scope 1 and 2.

Accounting principles

The Greenhouse Gas Protocol previously mentioned also includes guidance on setting organisational boundaries. Setting organisational boundaries is essentially the act of determining what is in and what is out of the different scopes. There are different methods available (see Box 1, next page) for this because the GHG protocol recognises that business operations vary in their legal and organisational structure and relationship to other parties.

Recommendations

In the 2018/19 footprint, a financial control approach was applied to the footprint.

We recommend when the council begin to construct their latest footprint, they:

- a) Review whether an operational control approach would be more suitable and better represent their influence
- b) Seek to make the council’s influence and power of control more transparent.

The GHG protocol advises that the chosen criteria should best reflect the organisation’s actual power of control.

Scope 3 emissions present a further challenge in analysing your influence as this can be much more diverse. Many Scope 3 sources extend beyond your geographic boundary.

Clearly defining these boundaries is important when justifying the scope of any potential target.

02 – COUNCIL PROFILE AND FOOTPRINT

EMISSIONS ANALYSIS

Box 1: Accounting approaches

There are two approaches for consolidating emissions:

Equity - a company accounts for GHG emissions from operations according to its share of equity in the operation. It reflects economic interest.

Control - a company accounts for all the GHG emissions from operations over which it has control. Control can be defined as either operational or financial.

- Operational control - when the organisation has the full authority to introduce and implement its operating policies at the operation.
- Financial Control - The company has financial control over the operation if the former has the ability to direct the financial and operating policies of the latter with a view to gaining economic benefits from its activities or if it retains the majority risks and rewards of ownership.

See the difference between the two control approaches opposite.

A ✓ implies the emissions would be considered within Scope 1 & 2.

A ✕ implies emissions would be considered Scope 3.

Leasing relationship	Description*	Financial Control	Operational Control
Council are the lessor	Council still own asset and recognise on their balance sheet, but a 3rd party operates it	✓	Explore degree of influence
Council are the lessor	Asset no longer recognised as fixed asset on the council's balance sheet, even though ownership is retained.	✕	✕
Council are the Lessee	Council do not own the asset or recognise on their balance sheet, but do operate it	✕	Explore degree of influence
Council are the Lessee	Asset is recognised as fixed asset on the balance sheet (less common) and de-recognised from the lessor's, even though still a lease	✓	✓

*Financial accounting treatment may be subject to change 2021/22 under IFRS16, which may in-turn impact carbon accounting treatment.

02 – COUNCIL PROFILE AND FOOTPRINT

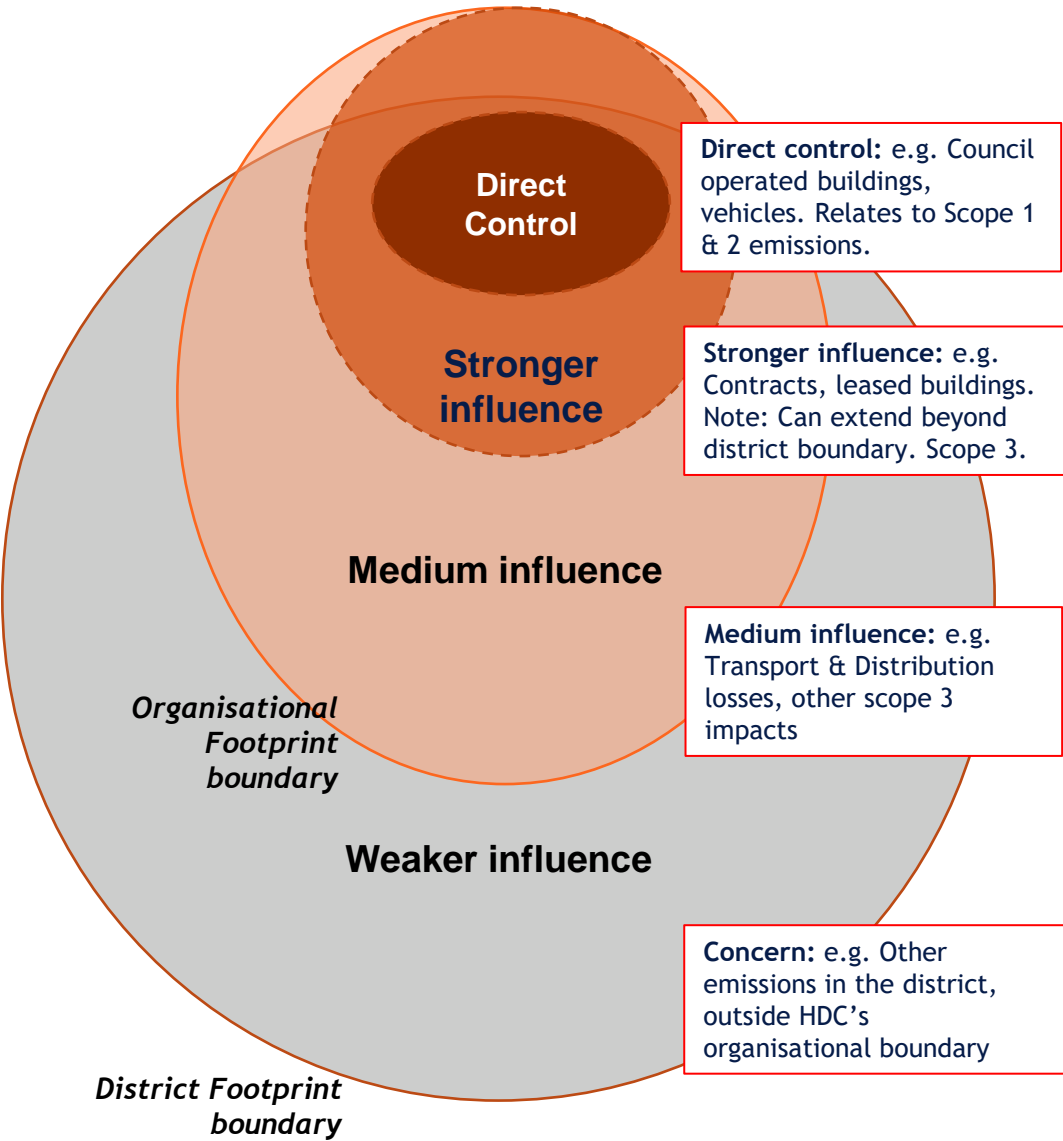
EMISSIONS ANALYSIS

Exploring influence

This chart illustrates that Horsham District Council’s influence is varied and complex across the different activities that occur within your own operations and also across the district. Influence bandings are based on Anthesis’ judgment following discussion with officers, and are by no means definitive. The examples that relate to each banding are intended to highlight opportunities for HDC to apply their influence in areas or ways previously not fully explored (e.g. by using ‘convening power’ and/or policy).

Influence extends beyond the district boundary, whereby HDC’s demand (and supply) of goods and services drive emissions in supply chains around the world. Such emissions are referred to as consumption based emissions (relative to the [UK produced emissions totals](#)). This exercise is of particular value in determining the boundary of any Scope 3 target, where your ability to influence is an important consideration.

Influence	Description
Direct Control	Emissions sources are directly owned or operationally controlled by the Council.
Stronger	Owners and operators of emissions sources are clearly defined but are not directly owned or operated by the Council. Emissions relate to council procurement or council led activities. Impacts occur inside and outside the boundary.
Medium	Emissions sources are also clearly defined, but emissions are associated with consumption from transportation, distribution, and losses of energy and fuels associated with Direct or Stronger influence activities.
Weaker	Outside organisational boundary: Owners and operators of emissions sources are not clearly defined, influence limited. To address these emissions it is recommended that a district wide target is set.



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02 – COUNCIL PROFILE & FOOTPRINT

D) HORSHAM DISTRICT PROFILE & FOOTPRINT

Although the district-wide carbon emissions are not the subject of the Council’s 2019 motion, It is important that the Council’s actions are not carried out in isolation from the wider district context. The District’s Corporate Plan 2019-2023 includes an aim to work with partners towards becoming a carbon neutral district.

Whilst this is out of scope for this report, here we provide a brief overview of Horsham District and its emissions profile. The aim is for HDC to lead by example and inspire the same level of ambition across the district.

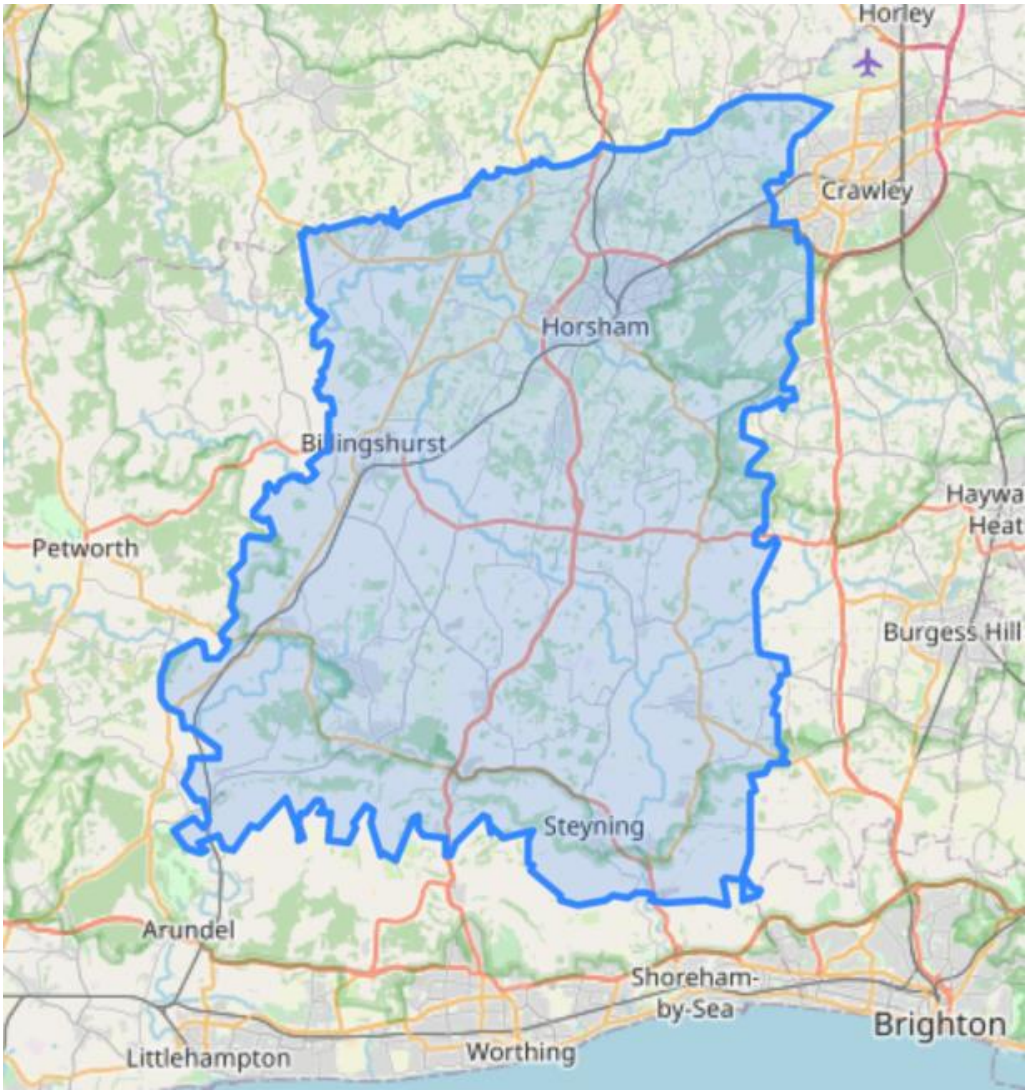
02 – COUNCIL PROFILE AND FOOTPRINT

HORSHAM DISTRICT PROFILE

Horsham District is situated midway between London and the South Coast and stretches between Gatwick Airport and South Downs National Park. It consists of 23 market towns and villages with Horsham Town at the commercial centre.

The district is 85% rural and includes several areas of outstanding natural beauty. Horsham District is part of the Coast to Capital Local Economic Partnership which includes the Gatwick Diamond partnership.

Metric	Description
Size	205 mi ²
Population	140,000
Households	54,100
Renewable Electricity Generation	108 GWh
Recycling rate	53.5%
Number of businesses/enterprises	7,605

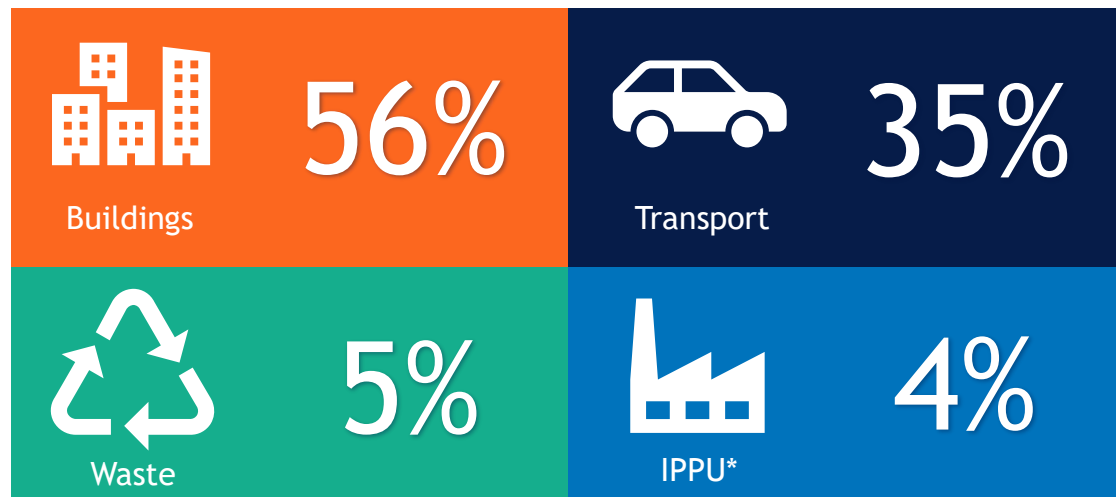


02 – COUNCIL PROFILE AND FOOTPRINT

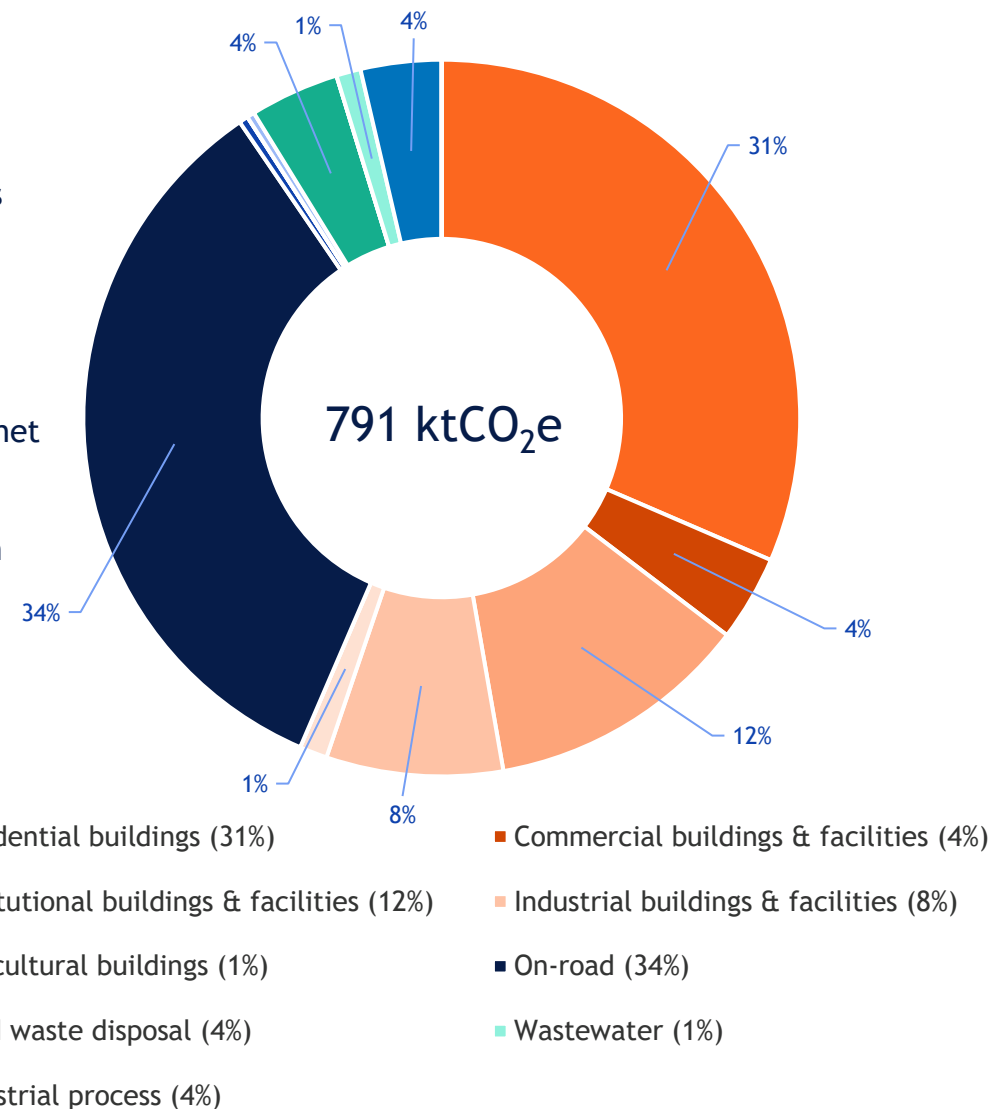
HORSHAM DISTRICT FOOTPRINT

The pie chart (right) shows the SCATTER sub-sector inventory for direct and indirect emissions within Horsham District in 2017.

- Agriculture, Forestry and other land use has been excluded as it includes carbon sinks i.e. negative emissions.
- Land use absorbs 92 ktCO₂e. However, emissions from livestock mean that there is a still a net positive contribution from this sector.
- The Council’s carbon footprint above accounts for approximately 2% of the District’s carbon footprint.



*Industrial Process and Product Use



03 Setting a Target



03 – SETTING A TARGET

RESULTS SUMMARY

Horsham District Council have publicly acknowledged their ambition to work towards a net zero carbon target, but not yet committed to action. Anthesis were contracted to review HDC’s footprint and undertake an analysis of 3 types of target options in order to make a recommendation on which option to proceed with.

<p>Method</p> <p>We applied the 3 different target options available to assess the most appropriate course of action. These target types were:</p> <div><div>1</div><div><ul style="list-style-type: none">• ‘Absolute’ Net Zero: 2030 and 2050: A target based on a goal of carbon neutrality by a set date. Popular with Local Authorities.</div></div> <div><div>2</div><div><ul style="list-style-type: none">• Science Based Target Initiative (SBTi) - 1.5°C and 2°C: Reduction pathways in line with the Paris Climate Agreement. Primarily aimed at businesses.</div></div> <div><div>3</div><div><ul style="list-style-type: none">• Tyndall Budget: Target method aimed at whole local authority areas. We have scaled down to apply to HDC as an organisation.</div></div> <p>We undertook a quantitative analysis of each option’s “carbon budget”, and give commentary around their criteria and scope.</p>	<p>Recommendation</p> <p>Anthesis recommends setting two targets, addressing your Scope 1&2 and your Scope 3 emissions separately.</p> <ul style="list-style-type: none">• Scope 1&2: Apply the Carbon Neutral by 2030 target <p>This target option signals a desire to lead, brings HDC in line with West Sussex County Council’s ambitions. It allows for some contingency against the science if this is not met. Setting a highly ambitious target accelerates many financial and reputational benefits, and positions you well for any future increases to the level of ambition required driven either by HDC, or global factors.</p> <ul style="list-style-type: none">• Scope 3: Set a Carbon Neutral by 2050 target <p>This will primarily relate to emissions associated with Procurement and Leased Buildings. This follows SBTi guidelines focus on a significant part of your Scope 3 emissions that you are best positioned to influence. Setting a Scope 3 target offers many benefits both in your value chain and in the wider district.</p>	<p>Key Next Steps</p> <p>The council should look to formally approve the target, before engaging the public through an awareness campaign.</p> <p>Our Climate Action Plan highlights carbon reduction opportunities available in achieving the target, and will help in prioritising actions.</p> <p>HDC may wish to explore improved data management protocols particularly around your Scope 3 emissions, to improve confidence in reporting and monitoring against the target. However, we do not believe that this will substantially impact the target choice or proposed rationale.</p>
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03 – SETTING A TARGET

A) INTRODUCTION

Horsham District Council opted not to select a target date when they noted a climate emergency. Instead, they have chosen to review the different options available for setting a target and the implications of each.

In this section we cover the wider context for setting a target, including relevant policy, key considerations and the approaches available to HDC.

03 – SETTING A TARGET CONTEXT

National picture

Over two-thirds of District, County, Unitary & Metropolitan Councils in the UK have now declared a Climate Emergency. Based on a [full list of councils](#) that have declared, the majority have set a target date of 2030 or earlier and around 70 have not officially set a target date. The targets span both Local Authorities as organisations and Local Authorities in terms of the area within their boundary.

Available methods

Whilst there are methods in place for setting targets for businesses and methods for setting district-wide targets, there is no sector-specific mechanism in place for setting a target for HDC's own organisation and operations. Therefore, this chapter will apply the different approaches available to assess the most appropriate options for HDC.

Aims:

- Identify a suitable emissions reduction pathway and understand the high level implications of different target dates and reduction pathways.
- Obtain a sense of the ambition and scale of the challenge associated with a science-based target and other reduction pathways.
- Inform the development of a carbon reduction plan in Chapter 4.



03 – SETTING A TARGET POLICY CONTEXT



The Paris Agreement set the international target to limit global temperature rise to well below 2°C with the aim of 1.5 °C above pre-industrial levels. The follow up report from the IPCC stated that this requires a reduction in GHG emissions by 45% by **2030**.



As part of the Paris Agreement, the EU and its member states committed to a minimum of 40% reduction in emissions by 2030. In December 2019, the EU agreed to set a target of becoming carbon neutral by **2050**.



The Climate Change Act 2008 introduced a legally binding target for the UK to reduce greenhouse gases by 80% by 2050 against a 1990 baseline. In June 2019, the target was updated to reach Net Zero by **2050**.



In February 2019, West Sussex County Council declared a Climate Emergency and pledged to make the county carbon neutral by **2030** including both production and consumption emissions. They also committed to working with other councils to limit global warming to less than 1.5 °C.



In June 2019, as part of their acknowledgement of a climate emergency, Horsham District Council committed to “...developing and auditing the council’s activities to see what further practical changes, in the form of a plan, we can implement to reflect best environmental practice and work towards a zero carbon target.”

03 – SETTING A TARGET

WHAT DOES CARBON NEUTRAL MEAN?

Generally speaking, ‘carbon neutral’ or ‘net zero’ typically mean the same thing: That some carbon/GHG emissions remain but are then ‘netted off’ or ‘offset’ through carbon dioxide removal. Such removal may occur due to Negative Emissions Technologies (NETs) such as geo-sequestration or biomass energy with carbon capture and storage, or, natural sequestration via means such as afforestation. The boundary of the carbon neutrality target is important as this defines what activities and greenhouse gases are in scope for reduction and/or off-setting, if such a claim is to be made.

Discussion of net zero is linked to offsetting. It may be possible for the Council to attain certified ‘Carbon Neutrality’ status (i.e. Under PAS 2060), using local offsets. However this would require further investigation to understand if the cost, timings and carbon savings would be feasible and/or the best use of public money relative to other un-certified options.

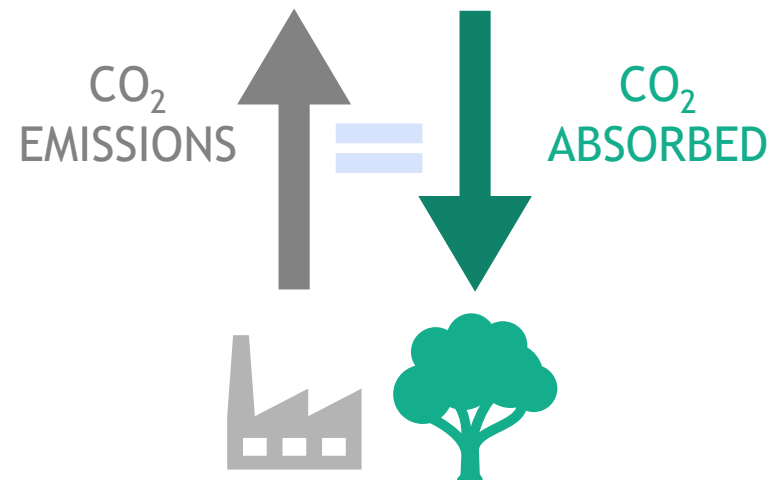
Further options for offsetting are explored in Chapter 4 as part of the carbon reduction plan.

Case Study: Cheshire East Council

As part of their climate emergency declaration, Cheshire East committed to becoming carbon neutral in their own operations by 2025. Their [Climate Change Action Plan](#) included an assessment of what it means for a local council to be carbon neutral.

This considered key factors such as:

- i. Likelihood of requiring offsets
- ii. The scope and boundary of neutrality
- iii. The scope and boundary of offsetting
- iv. The cost of offsetting vs other low carbon investments
- v. The value that certified ‘Carbon Neutral’ status offers the public



03 – SETTING A TARGET

THE IMPORTANCE OF 1.5°C AND 2°C

Impacts of 1.5°C vs 2°C of warming

In response to the targets outlined in the Paris Agreement, the IPCC published a Special Report into Global Warming of 1.5°C to explore the associated impacts and emission pathways.

- **The global climate has already warmed 1°C relative to pre-industrial levels** - There is already evidence that this change in climate relative to the pre-industrial period has increased the magnitude and frequency of impacts on both natural and human systems.
- **There will still be impacts at 1.5°C** - Although 1.5°C is set as the higher ambition target of the Paris Agreement, there will still be climate impacts at this level of warming. Every fraction of warming above this, increases the likelihood of more dangerous impacts and the risk of passing planetary tipping points (irreversible change).
- **Half a degree matters and it matters more for some** - Part of the report assesses the significance of meeting a 1.5°C target versus a 2°C target. Although 0.5°C seems like a small increase, this translates into robust changes in the earth system which will disproportionately affect some parts of the world.

Reaching 1.5°C

The challenge of keeping global warming to 1.5°C is becoming increasingly difficult with each year of insufficient action. The most recent [Emissions Gap Report](#) emphasises that we are on the brink of missing this target. It is now assumed that 1.5°C will not be achievable without the use of Negative Emissions Technologies (NETs) operating at a global scale. However, the development of NETs remains highly speculative and uncertain.

The difference between a 1.5 vs 2 degree world



+ 0.1 m of sea level rise exposing an additional 10 million people to the related risks



Increase in vector-borne diseases such as Malaria and Dengue



Coral reefs projected to decline >99% in with 2°C warming



420 million fewer people being frequently exposed to extreme heatwaves



Ice-free summers in the Arctic every 10 years in a 2°C world versus every 100 years in a 1.5°C world

03 – SETTING A TARGET

THINKING IN TERMS OF BUDGETS

It is important when evaluating the most appropriate targets for Horsham that the overall carbon budget as well the target date is considered.

Carbon Budget: The allowed cumulative total of emissions over a period of years which ensures temperature change remains below dangerous levels - [The Tyndall Centre for Climate Change Research](#).

Emissions now mean impacts later

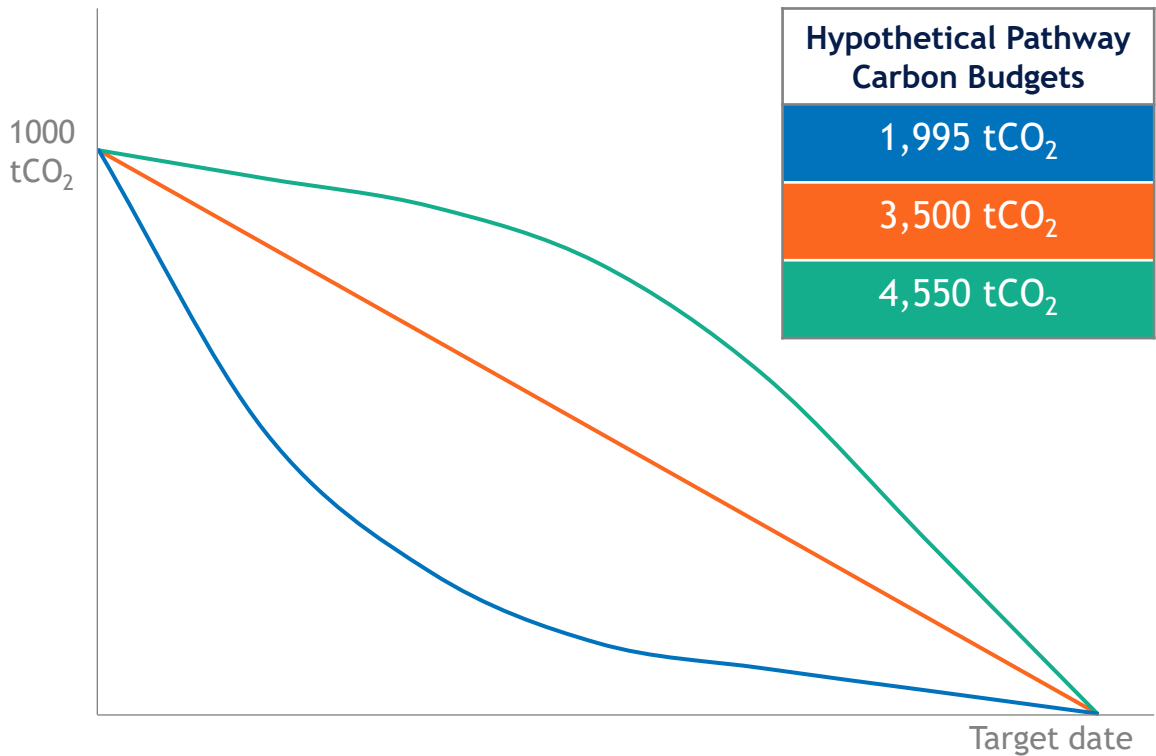
The most crucial element of this approach is understanding the importance of cumulative carbon emissions. Once emitted, carbon dioxide remains in the atmosphere for many decades, contributing to increasing the average global temperature. The carbon budget does not reset; it represents a fixed upper limit to emissions.

This is analogous to a monthly payday cheque, you can spend it all on the first day after getting paid, or you can stretch it out over the course of the month and beyond; but once it is spent there is no budget left.

This means that the year that Horsham District Council becomes zero-carbon is considerably less important than the annual reductions rate of emissions.

Example:

Although all three of these hypothetical pathways reach zero carbon by the same target date, the cumulative emissions or carbon budget associated with each pathway is significantly different.







03 – SETTING A TARGET

TARGET OPTIONS

Approach

We have reviewed 3 types of target and compared these against a ‘do nothing extra’ scenario also referred to as the ‘Business as Usual’. This chapter will cover the context, methodology and implications of these three target setting approaches (outlined below). The target options have been initially applied to HDC’s Scope 1 and 2 emissions only, as this is within their direct control. Further options for a Scope 3 target are outlined later in the chapter.

Reference case	Target 1	Target 2	Target 3
Business as Usual	Absolute Targets	Science Based Targets	Tyndall pathway
			
This pathway is included to provide perspective on the scale of other targets. It represents the likely pathway should there be no further action from HDC.	This analysis is based on aligning with similar targets set nationally and regionally. It assumes a linear reduction to a specific target date.	This applies the approach from the Science-Based Targets initiative for businesses to support alignment with the Paris Agreement targets.	Another type of target aimed at supporting the Paris Agreement goals. This is aimed at an area-wide scale but has been applied to HDC for this analysis.

03 – SETTING A TARGET

BAU PATHWAY



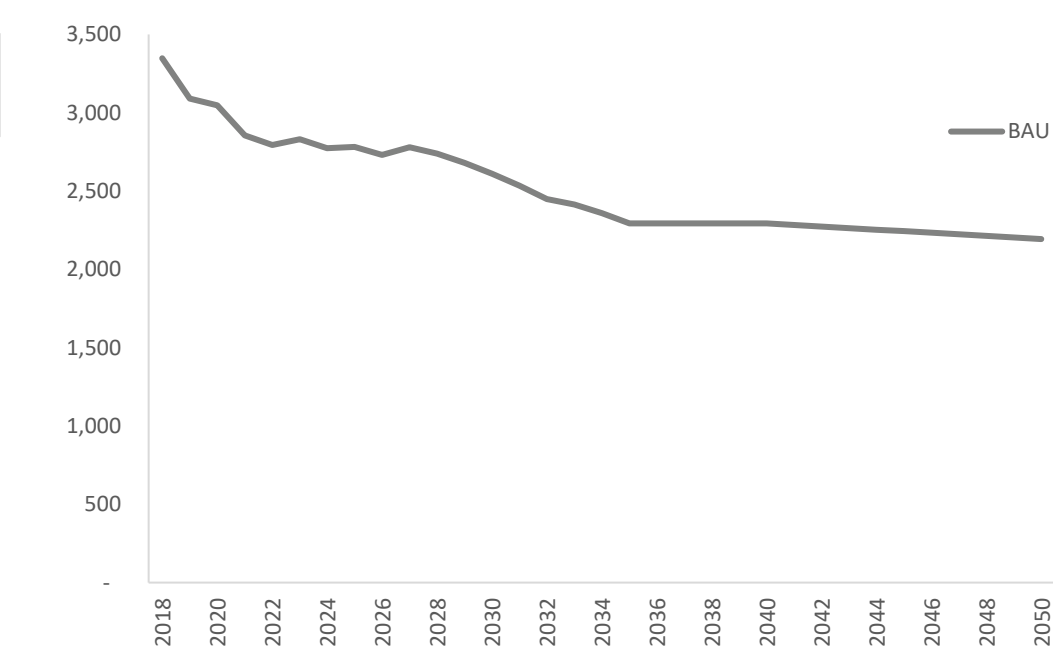
Introduction

A business as usual (BAU) pathway has also been constructed to serve as a reference case and provide perspective on the scale of ambition and reductions necessary to meet the different types of targets.

Method

The business as usual scenario represents a scenario where the council do not take any further action and just allow the national grid to decarbonise (in line with national requirements). Reductions reflect BEIS Energy and Emissions Projections.

Based on stakeholder engagement with key offices from the council, there were no planned projects with sufficient data to be included in the Scope 1 and 2 BAU. No forecasted growth in the Council has been included in this projection.



Business as Usual	2025 emissions tCO ₂ e	2030 emissions tCO ₂ e	2050 emissions tCO ₂ e	Total carbon budget at 2050
Combined S1&2	2,782	2,611	2,194	82,988
Total % reduction from 2018	17%	22%	34%	

03 – SETTING A TARGET

B) ABSOLUTE LINEAR REDUCTIONS



Introduction to 2030 and 2050 targets

An absolute reduction target is based on achieving a set reduction in emissions by a given date. This type of target is commonly set by Local Authorities but varies in the date, reduction pathway, scope and boundary of emissions.

This approach would allow Horsham District Council to align with either national or regional targets.

03 – SETTING A TARGET

ABSOLUTE TARGETS - INTRODUCTION

Two absolute reduction target options have been included to assess the implications of aligning with a national level target or a county level target.

Context

A common type of target set by Local Authorities has been an absolute reduction target, often in the form of a target date for carbon neutrality. The dates set for these range from 2025 to 2050 and have been applied both to organisational emissions and area-wide emissions.

This approach is based on selecting a year for net zero, rather than considering a carbon budget (see page "Thinking in terms of budgets"). This means this approach is open to possibility of emissions only being reduced as the target year approaches, not in the short term. Due the cumulative nature of CO₂ in the atmosphere, any 'over-budget' years are effectively carried forward. This could result in emissions exceeding Horsham's fair contribution to the Paris Agreement targets.

Criteria

There is no criteria in place for setting an absolute reduction target or in the monitoring and reporting of it. The process and selection of a date is at the discretion of the Local Authority.

UK 2050 Target

In 2019, the UK was the first major economy to pass a legally binding target of reducing all greenhouse gas emissions to net zero by 2050. This was based on the recommendations of the [Committee on Climate Change](#) who argued that this would constitute the UK's highest possible ambition and would meet the UK's obligations under the Paris Agreement.

West Sussex 2030 Target

West Sussex County Council have noted a Climate Emergency and pledged to make the County Council carbon neutral by 2030 including both production and consumption emissions. The motion did not include details of the pathway that will be taken to achieve this.

A number of other authorities in the county have also set absolute reduction targets for various dates:

Council	Climate Emergency Commitment
Adur and Worthing Councils	Carbon Neutral by 2030
Arun District Council	Declared
Chichester District Council	Initial action plan states 10% reduction until 2025
Crawley Borough Council	Reduce emissions 45% by 2030 and to zero by 2050
Mid Sussex District Council	Climate emergency noted and support for government 2050 target

03 – SETTING A TARGET

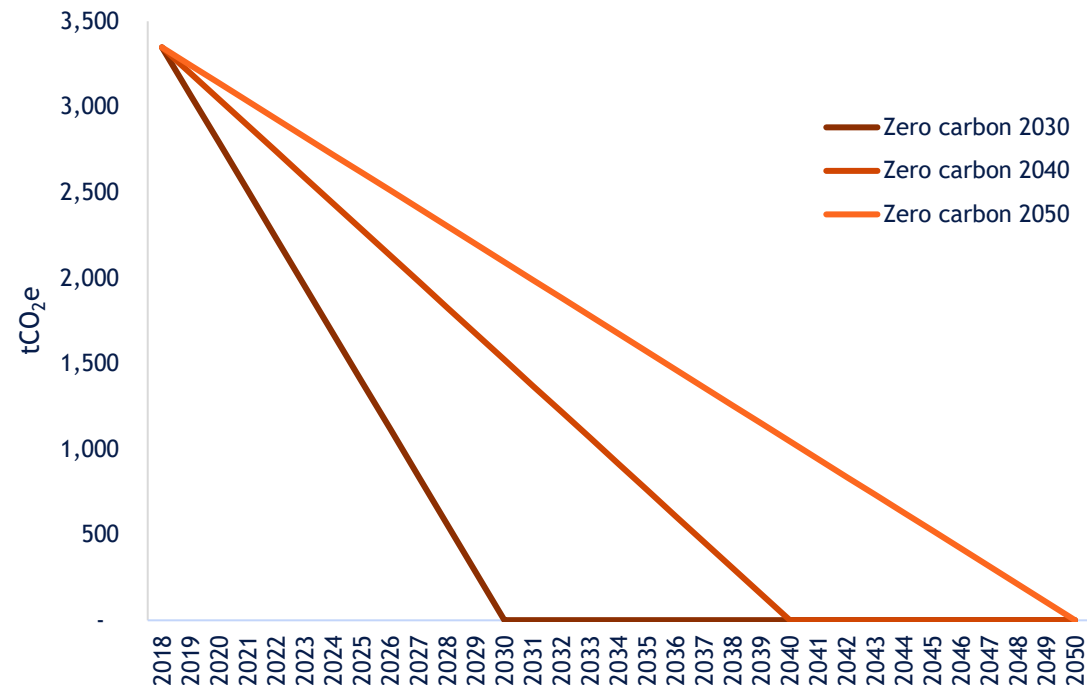
ABSOLUTE TARGETS - ANALYSIS

Method

This approach has taken the national and regional targets for carbon neutrality and applied them to the Horsham footprint. There is limited information on the pathways to achieve these targets so the emissions pathways for Horsham have been assumed to decrease linearly until net zero is reached. Therefore, the same reductions in emissions are expected on an annual basis and emissions are expected to remain at net zero once this has been reached.

Carbon Neutral 2050	2025 emissions tCO ₂ e	2030 emissions tCO ₂ e	2050 emissions tCO ₂ e	Total carbon budget at 2050
Combined S1&2	2,616	2,093	0	55,242
Total % reduction from 2018	22%	37%	100%	

Carbon Neutral 2030	2025 emissions tCO ₂ e	2030 emissions tCO ₂ e	2050 emissions tCO ₂ e	Total carbon budget at 2050
Combined S1&2	1,395	0	0	21,762
Total % reduction from 2018	58%	100%	100%	



This target setting approach could be applied to any chosen year, for instance a ‘net zero by 2040’ pathway is included below.

Carbon Neutral 2040	2025 emissions tCO ₂ e	2030 emissions tCO ₂ e	2050 emissions tCO ₂ e	Total carbon budget at 2050
Combined S1&2	2,283	1,522	0	38,502
Total % reduction from 2018	32%	55%	100%	

03 – SETTING A TARGET

ABSOLUTE TARGETS - SUMMARY

Advantages

- Simple to understand
- It is a similar approach to neighbouring and other local authorities
- It would align with either national or regional goals
- No criteria associated with this target

Disadvantages

- 2030 target is not based on scientific analysis of global emissions pathways associated with the Paris Agreement targets.
- If a carbon budget is not considered then the date alone does not indicate the emissions pathway.
- Lack of criteria and scientific grounding means it is less rigorous and more likely to be subject to scrutiny.
- Less guidance and systems in place for reporting and accounting for emissions.
- It would become increasingly difficult to achieve the same magnitude of reductions every year as target date approaches.

Relationship to district

- No set relationship to district wide goals but the council could adopt a similar district wide target.

These two targets offer the most flexibility in how emissions reductions would be achieved. Although these types of target are common, they may be subject to scrutiny if they are not grounded in rigorous science or subject to reporting and accounting guidance.



03 – SETTING A TARGET

C) SCIENCE BASED TARGETS



Introduction to SBTs

The Science Based Targets initiative (SBTi) is a partnership between CDP, UN Global Compact, WRI and WWF, with a stated goal to help “companies determine how much they must cut emissions to prevent the worst impacts of climate change.” Targets adopted by organisations to reduce GHG emissions are considered “science-based” if they are in line with the level of decarbonisation required to keep global temperature increase below 2°C compared to pre-industrial temperatures, as described in the Assessment Reports of the Intergovernmental Panel on Climate Change.

This approach would allow Horsham District Council to align its emission reduction activities with the international Paris Agreement targets.



03 – SETTING A TARGET

SCIENCE BASED TARGETS – INTRODUCTION

This target option was originally suggested in the 2019 carbon footprint report and the council were interested in reviewing this as a more complex and scientifically based approach to selecting a carbon reduction pathway.

SBT and Local Authorities

The SBTi is aimed at private sector organisations. The initiative, at present, does not accept SBT commitments from Local Authorities which means that if a SBT is set by Horsham District Council it will not be formally recognised by the SBTi. However, this does not stop the methods of SBTs being applied to Horsham's target setting process and aligning with their principles and robust criteria could still be beneficial. Therefore, where appropriate methods exist, they have been applied to Horsham District Council's footprint.

Criteria

The SBTi comes with a set of rigorous criteria that must be met by organisations in order for them to be recognised. The full criteria is available from <https://sciencebasedtargets.org/> but below are some of the key aspects that could be applied to Horsham.

- **Boundary:** Organisation-wide Scope 1 and Scope 2. Companies should complete a Scope 3 screening; An ambitious and measurable Scope 3 target with a clear time-frame is also required when Scope 3 emissions cover a significant portion (greater than 40% of total emissions) of an organisation's overall emissions. Scope 3 targets must cover at least two-thirds of Scope 3 emissions.
- **Timeframe:** Minimum of 5 years, maximum of 15 years. However, organisations are still encouraged to set long term targets.
- **Level of ambition:** At a minimum, consistent with the level of decarbonisation required to keep global temperature increase below 2°C compared to pre-industrial temperatures.
- **Reporting:** The organisation will disclose company-wide GHG emissions inventory on an annual basis.
- **Offsetting:** The use of offsets is not counted as reductions toward the progress of organisation's science-based targets.

Case Study: SSE PLC

SSE recently set a science-based target as part of the SBTi. Their commitments are as follows:

- reduce scope 1 GHG emissions 60% per gCO₂e/kWh by 2030 from a 2018 base year.
- reduce absolute scope 1 and 2 GHG emissions 40% by 2030 from a 2018 base year.
- 50% of its suppliers by spend will have a science-based targets by 2024.
- reduce absolute GHG emissions from use of products sold 50% by 2034 from a 2018 base year.

Case Study: TESCO

Tesco committed to reduce its direct (scope 1) and indirect (scope 2) greenhouse gas emissions by 60% by 2025, using a 2015 base-year. Tesco also committed to reduce its scope 3 GHG emissions by 17% by 2030, using a 2015 base-year.

03 – SETTING A TARGET

SCIENCE BASED TARGETS - ANALYSIS

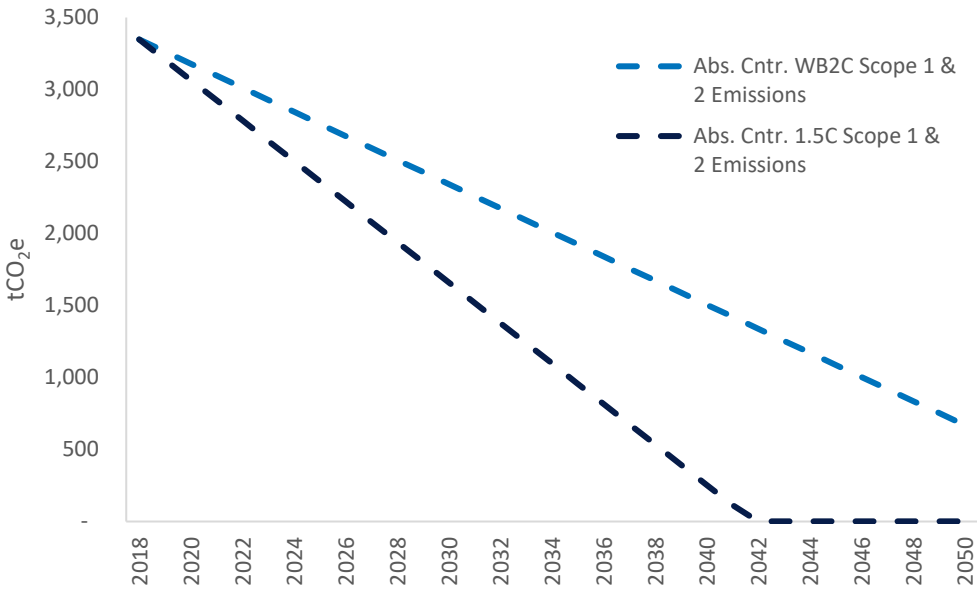
Method

- There are 3 main methods used for calculating SBTs, which are listed below:
- **Sector-based approach** - Based on sector-specific carbon budgets determined by mitigation/ technology options and activity projections.
 - **Absolute-based approach** - Based on absolute emissions reductions determined in climate reports (e.g. 49-95% below 2010 levels).
 - **Economic-based approach** - Based on the average emissions reductions determined in climate reports per projected economic output (49-95% below 2010 levels).

No sector-based approach has been developed for a local government sector and given that the economic based approach is more suited to private sector companies, the absolute based approach has been applied. To do this, the SBTi target setting tool was used for HDC’s Scope 1 and 2 emissions. SBT are set between 5-15 years, however the trend in reductions has been extended to 2050 in order to demonstrate the results of a continued SBT approach.

How does this relate to the Paris Agreement?

The Paris Agreement temperature targets are translated into an associated greenhouse gas budget and emissions pathway. There is no one individual emissions pathway associated with the temperature targets and scenarios may differ based on assumptions about population, policies and socio-economic factors. Therefore, the SBTi scenarios are drawn from over 400 peer reviewed pathways. The next stage is allocating the budget associated with this pathway between organisations. For this target calculation, a contraction approach has been applied which means all organisations reduce their absolute emissions at the same rate, regardless of their current and historical emissions.



Absolute Contraction - 1.5 °C	2025 emissions tCO ₂ e	2030 emissions tCO ₂ e	2050 emissions tCO ₂ e	Total carbon budget at 2050
Combined S1&2	2,364	1,661	0	41,542
Total % reduction from 2018	29%	50%	100%	

Absolute Contraction - well below 2 °C	2025 emissions tCO ₂ e	2030 emissions tCO ₂ e	2050 emissions tCO ₂ e	Total carbon budget at 2050
Combined S1&2	2,762	2,344	670	66,290
Total % reduction from 2018	18%	30%	80%	

03 – SETTING A TARGET

SCIENCE BASED TARGETS - SUMMARY

Advantages

- Based on robust scientific methodology and in line with good practice internationally.
- Alignment with international climate targets
- Structures in place to guide reporting and monitoring
- Accompanying guidance on setting scope 3 target

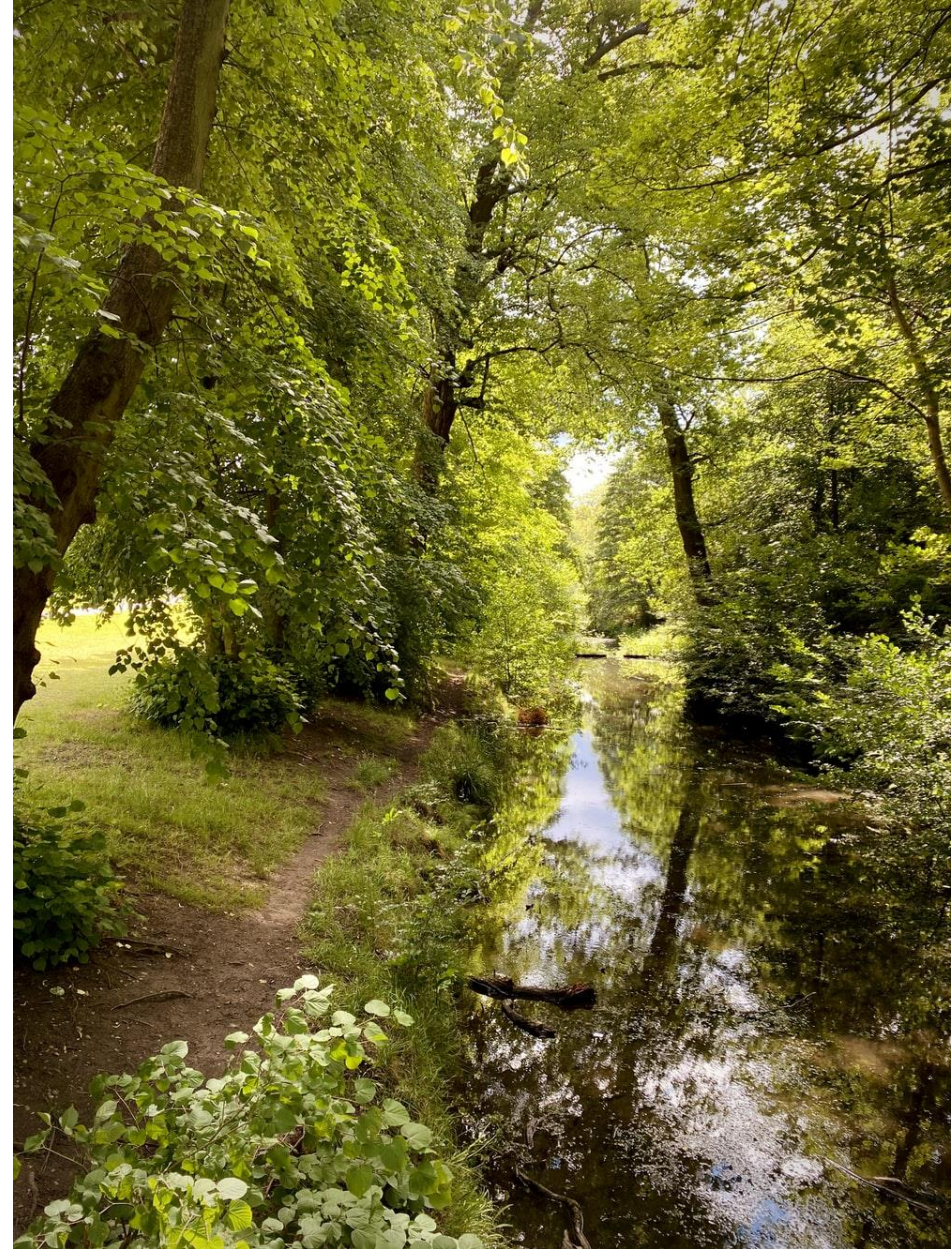
Disadvantages

- Not aimed at local authorities and unable to submit commitment for formal certification. HDC would have to wait for SBTi to accept commitments from local governments.
- Only short term - 5-15 year target.
- Rigorous criteria in place e.g. If strictly following this method, offsets would not be permitted which would mean carbon neutrality would not be achievable and contradict the corporate plan.
- It would become increasingly difficult to achieve the same magnitude of reductions every year as target date approaches.
- More complex to understand.

Relationship to district

- At present, there is no equivalent SBTi for district-wide target setting.

Adopting a more complex pathway does not necessarily mean it is more ambitious than the linear reductions previously outlined. The merits of this approach is that it is rooted in a robust scientific methodology and so would be viewed as more credible. However, it is not aimed at local authorities and the rigorous criteria that come with this target must be considered by the council in how they would achieve such a target. Given that the 2°C warming is equivalent to a 66% probability of keeping temperature rise below this limit, alongside the lack of progress that is currently being seen towards Paris Agreement targets, it is recommended that the 1.5°C is chosen over 2 °C as the annual reductions may not achieve this temperature target.



03 – SETTING A TARGET

D) TYNDALL CARBON BUDGET



Introduction to the Tyndall Budget

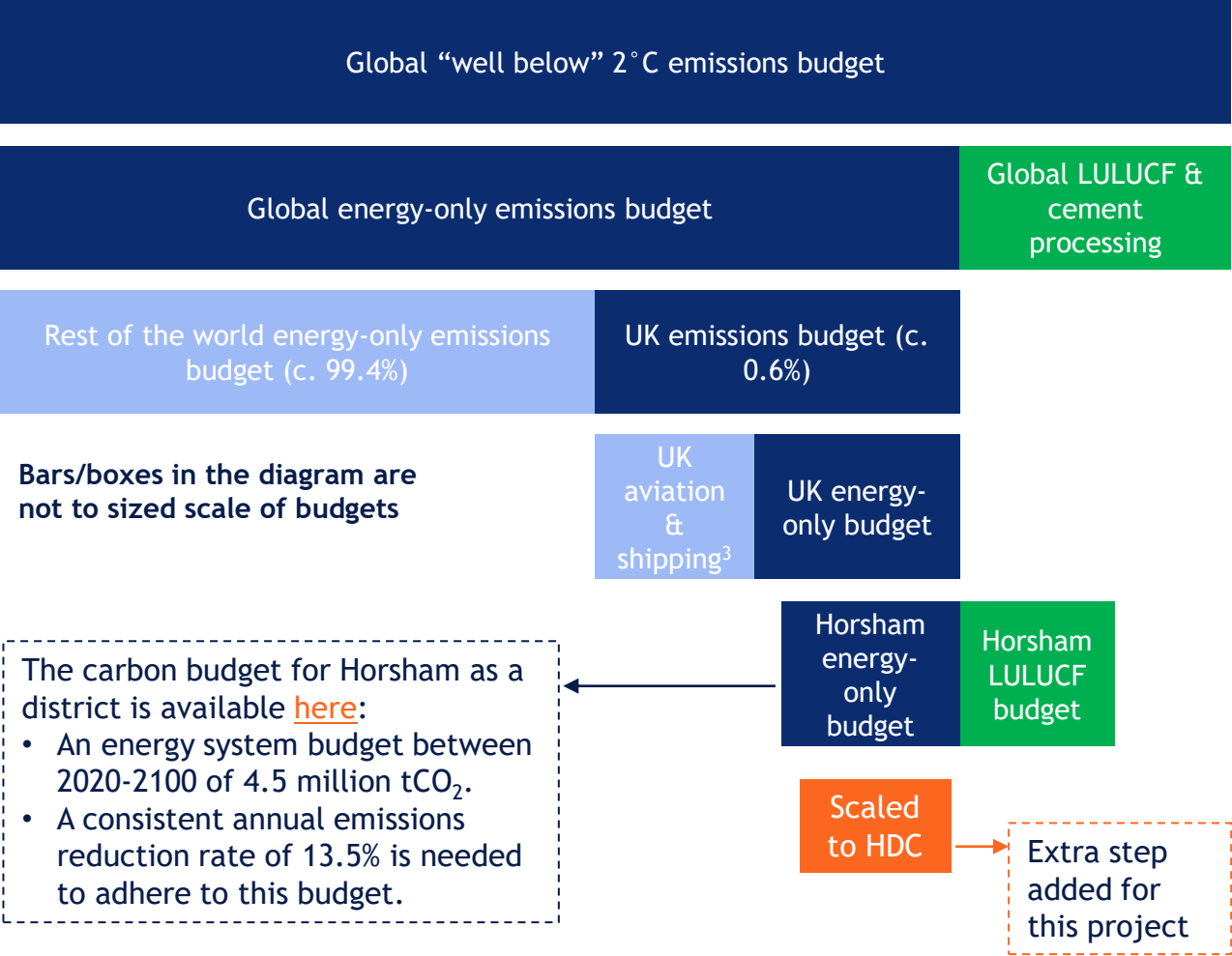
The Tyndall Centre for Climate Change Research, based at the University of Manchester, have translated the Paris Agreement targets of limiting temperature change below 2°C into a fixed emissions ‘budget’ for each local authority. Whilst this is a target based on science, it differs from the SBTi in that it’s primary purpose is to inform ambition at a district wide scale, not organisational. The Tyndall Centre approach also incorporates principles of equity in the Paris Agreement by allocating a smaller budget to developed country parties.

The Tyndall Centre carbon budget would allow Horsham District Council to lead the way for the district by ‘making its fair contribution’ towards meeting international targets.

Tyndall°Centre
for Climate Change Research

03 – SETTING A TARGET

TYNDALL BUDGET - INTRODUCTION



This target option has been included as an alternative example of a target based on science. The Tyndall Centre method has been developed specifically for Local Authorities in terms of area-wide emissions.

Context

The schematic on the left shows the approach taken by the Tyndall Centre to scaling emissions to derive a carbon budget. The global budget represents the total emissions allowed before the well below 2°C threshold for greenhouse gas concentration is crossed. This global budget can then be scaled down to a national level, and finally, a regional level.

Criteria

- This budget represents CO₂ only - Although other greenhouse gases do impact climate change, carbon dioxide is the main driver of long-term warming.
- Energy only budget - It excludes aviation from the budget, instead this is allocated at a national level. Land use and Land Use Change and Forestry (LULUCF) is also recommended to be monitored separately.
- Scope 3 in terms of the district is not included - i.e. activities outside of the district boundary. Note that scope 3 in terms of the district is not the same as scope 3 for the organisation. In fact, some scope 3 activities of the council would fall into scope 1 of the district.

03 – SETTING A TARGET

TYNDALL BUDGET - ANALYSIS

Method

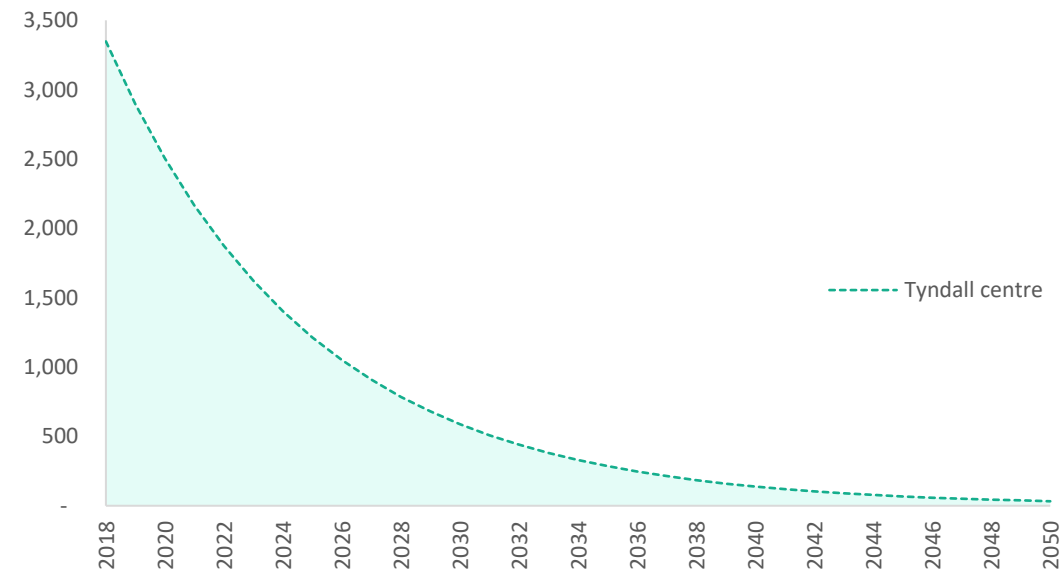
The method taken by the Tyndall Centre is outlined on the previous page. However, the budget is available for Horsham as a district therefore this has been scaled down to Horsham Council at an organisational level to provide a target. There is no defined method for scaling this to organisations. How the budget is split amongst organisations and groups in the district is not prescribed.

In this instance, the grandfathering approach has been extended based on the Council’s 2018 footprint. The grandfathering method is based on historic contributions i.e. the average proportion of CO₂ emissions from a particular group in recent years.

As this approach is budget based, the figure to the right is an example of how this budget could be allocated. If Horsham Council were to continue emitting Scope 1 and 2 emissions at the same rate as in 2018/19 then the budget would run out in 7 years.

How does this relate to the Paris Agreement?

As shown on the previous page, a global carbon budget is taken in from the IPPC Special Report on 1.5°C. A key difference between this approach and SBTi is the way the budget is allocated. The Tyndall budget approach is focused on equity and responsibility of regions, with a smaller budget allocated to OECD countries. There are also differences in what emissions are excluded from the budget, the full method is available [here](#).



Tyndall Budget	2025 Total tCO ₂ e	2030 Total tCO ₂ e	2050 Total tCO ₂ e	Total carbon budget at 2050
Combined S1&2	1,213	587	32	24,593
Total % reduction from 2018	64%	82%	99%	

03 – SETTING A TARGET

TYNDALL BUDGET - SUMMARY

Advantages

- Based on robust scientific methodology specific to Local Authorities
- Alignment with international climate targets
- Horsham making fair contribution to emissions reduction
- A budgets approach is an effective way to understand total emissions reductions required
- Takes a leading by example approach for the district

Disadvantages

- Not aimed at an organisational level, more appropriate to use at a district level
- Requires immediate ambitious actions, large reductions are required in the short term
- More complex to understand

Relationship to district

- This type of target is aimed at the district so there is a potential to align a district and organisational target.

This approach to target setting is based on the principles and targets of the Paris Agreement - Horsham making its fair contribution to limiting global warming to well below 2°C towards 1.5°C. However, this approach is designed for the district as a whole so Horsham should consider the way this budget should be allocated amongst stakeholders in the district.



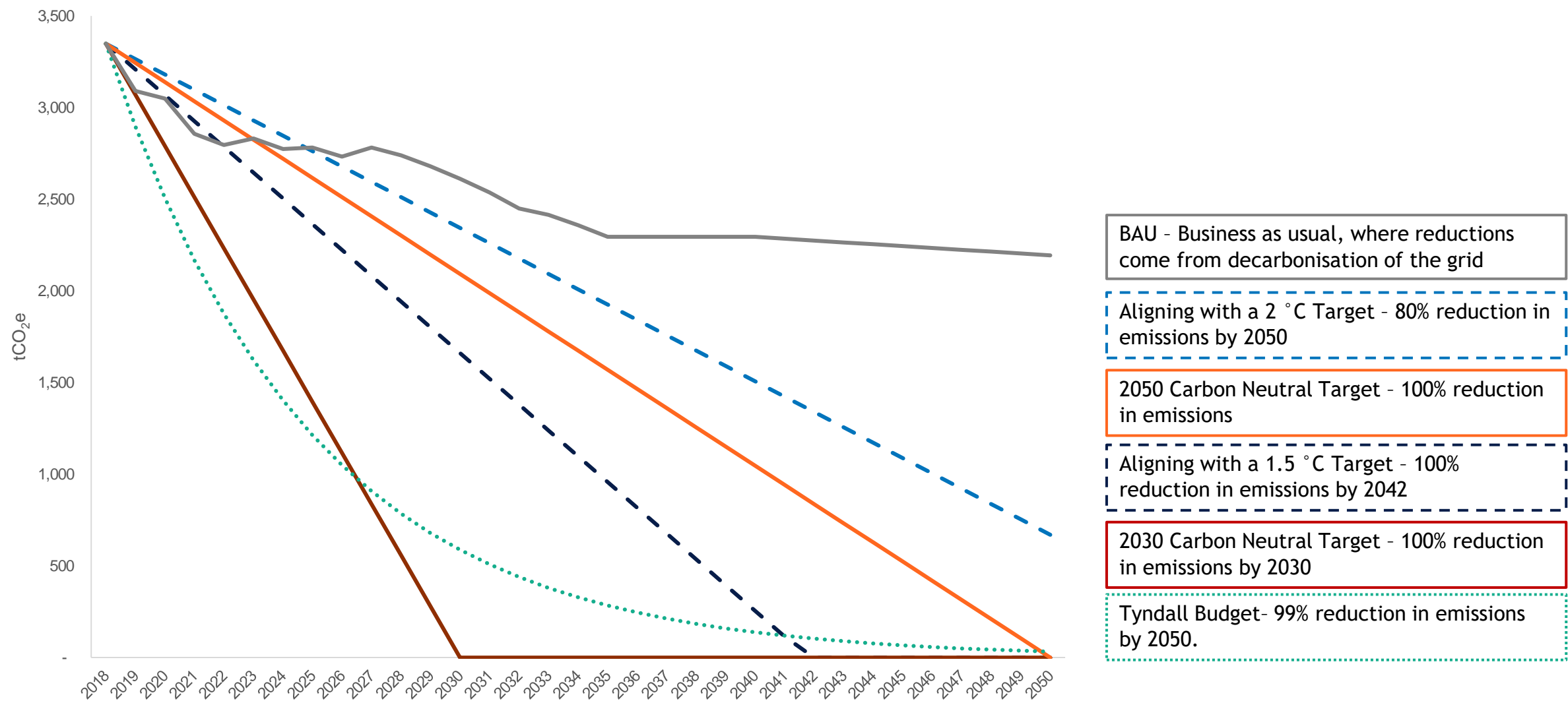
03 – SETTING A TARGET

E) COMPARING CARBON REDUCTION PATHWAYS

Having reviewed each target option available to Horsham District Council, we now provide a direct comparison of each option. Considering this in the context of the Business as Usual pathway highlights the scale of ambition required.

03 – SETTING A TARGET

COMPARING CARBON REDUCTION PATHWAYS - COMPARISON



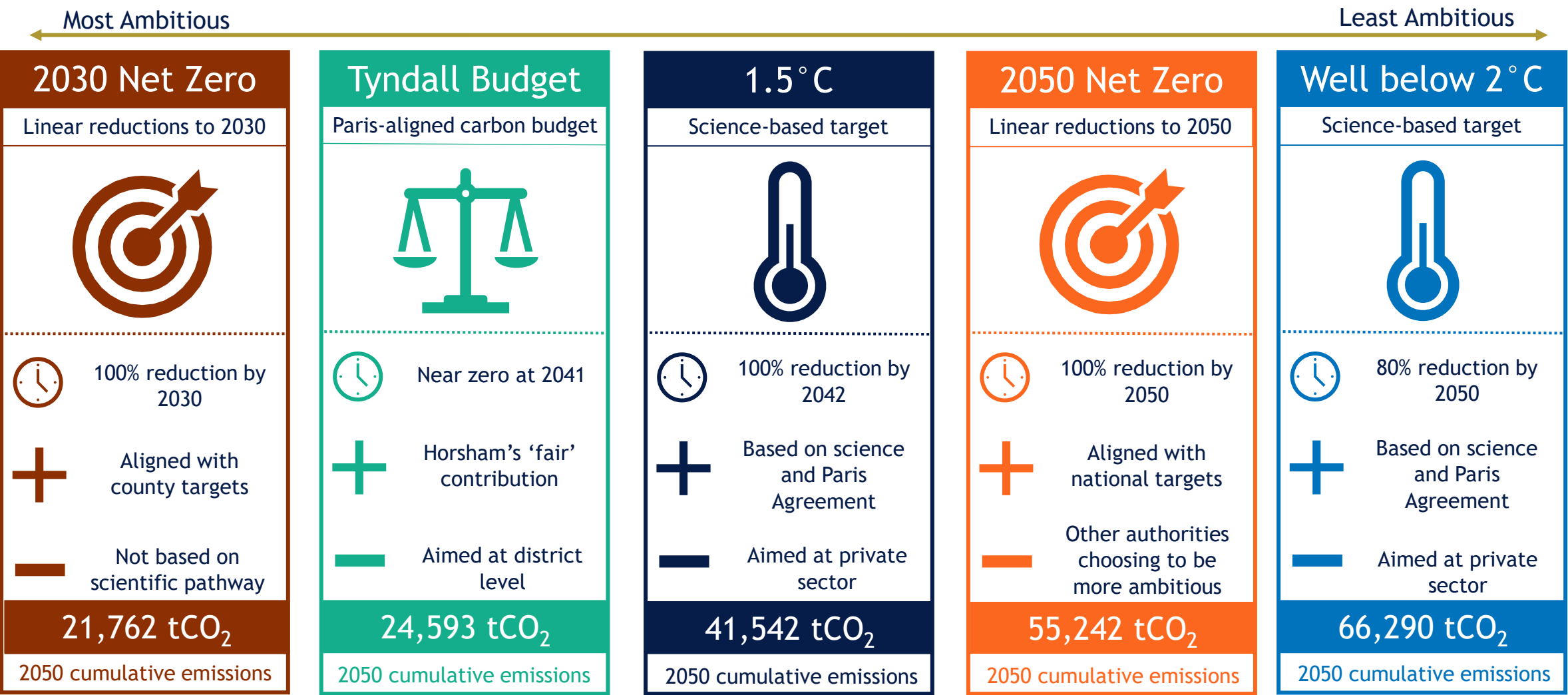
03 – SETTING A TARGET

COMPARING CARBON REDUCTION PATHWAYS - KEY STATISTICS

Target	Scope	Criteria	Key Milestones	Yearly reduction	Carbon Budget 2018-2050 (tCO ₂ e)	Assumptions
2030 Carbon Neutral	Optional	None	100% reduction by 2030	8.3% reduction from 2018/19 level	21,762	Assumes linear reduction to fixed date
2050 Carbon Neutral	Optional	None	100% reduction by 2050	3.1% reduction from 2018/19 level	55,242	Assumes linear reduction to fixed date
Science-based target (2 °C)	Scope 1 and 2. Scope 3 if criteria met.	No offsetting Scope 3 target if Scope 3 emissions over 40% Minimum 5 years and a maximum of 15 years Covers all GHGs	80% reduction by 2050	2.6% reduction from 2018/19 level	66,290	Assumes IPCC "well below 2 °C" trajectory is followed linearly
Science-based target (1.5 °C)	Scope 1 and 2. Scope 3 if criteria met.	No offsetting Scope 3 target if Scope 3 emissions over 40% Minimum 5 years and a maximum of 15 years Covers all GHGs	100% reduction by 2042	4.2% reduction from 2018/19 level	41,542	Assumes IPCC "1.5 °C" trajectory is followed linearly
Tyndall Carbon Budget	All emissions within boundary	Short term ambitious action required	99% reduction in emissions by 2050. Reaches near zero at 2041	13.5% reduction from previous year	24,593	Grandfathering from Horsham local authority area based on emissions share.

03 – SETTING A TARGET

COMPARING CARBON REDUCTION PATHWAYS - SUMMARY



03 – SETTING A TARGET

F) SCOPE 1 & 2 RECOMMENDATION

We have considered the differing Scope 1 & 2 target options available to you, reviewing varying ambition levels in line with the local context at Horsham District Council, and our broader experiences, to provide a recommendation.

03 – SETTING A TARGET

SCOPE 1 & 2 TARGET RECOMMENDATION

Anthesis recommends Horsham District Council apply the **Carbon Neutral by 2030** target in addressing their Scope 1 and 2 emissions. By setting this ambitious target you will enter a position of leadership and be acting in line with West Sussex County Council's ambitions.

Unlike the Science Based Target method, setting an Absolute Reduction pathway keeps offsetting options open to you- we will explore wider district sequestration opportunities in further detail later in this report. You will also have greater freedom to approach your reporting in a way which suits your organisation.

As your Scope 3 emissions lie outside of your direct control, we recommend a separate target- we will explore this next.

Why Lead?

- **Signal Strong Leadership-** In the spirit of driving ambitious action in the wider district, choosing this target signals strong intention to act
- **Maximise direct financial benefit** - Through energy efficiency and renewables, along with avoiding increased costs due to increasing energy prices, future carbon taxes or other legislative measures. Setting an ambitious target locks in these benefits early, meaning they payback for longer.
- **Maximise reputational benefit** - Attempting something truly transformational and more ambitious may create a strong point of differentiation, establishing the district as a leader.
- **Future proof against change** - Targets are only likely to become more ambitious. Consistent performance gaps (at a global, macro-economic scale) combined with constantly evolving evidence, continues to push the probabilities of adverse impacts in the wrong direction.
- **Take comfort in the contingency** - Unlike other targets, if you were to fall short, ending up 'in the pack' is still not a bad thing. However, aiming to be 'in the pack' and falling short, may be a different matter. Additionally, a lesser scale of ambition may inadvertently constrain innovation and the appetite to transform, before you've even got started.
- **Carry out your moral duty** - In 10 years time, younger generations may be asking why local authorities and individuals didn't do more when they had the chance.

03 – SETTING A TARGET

G) SCOPE 3

While outside of your direct control, addressing your organisation's Scope 3 emissions presents an opportunity to catalyse the broader adoption of carbon reduction initiatives in the district. Anthesis understands that Horsham District Council wishes to set an example here, actively driving emissions reductions among its suppliers and in the wider community.

03 – SETTING A TARGET

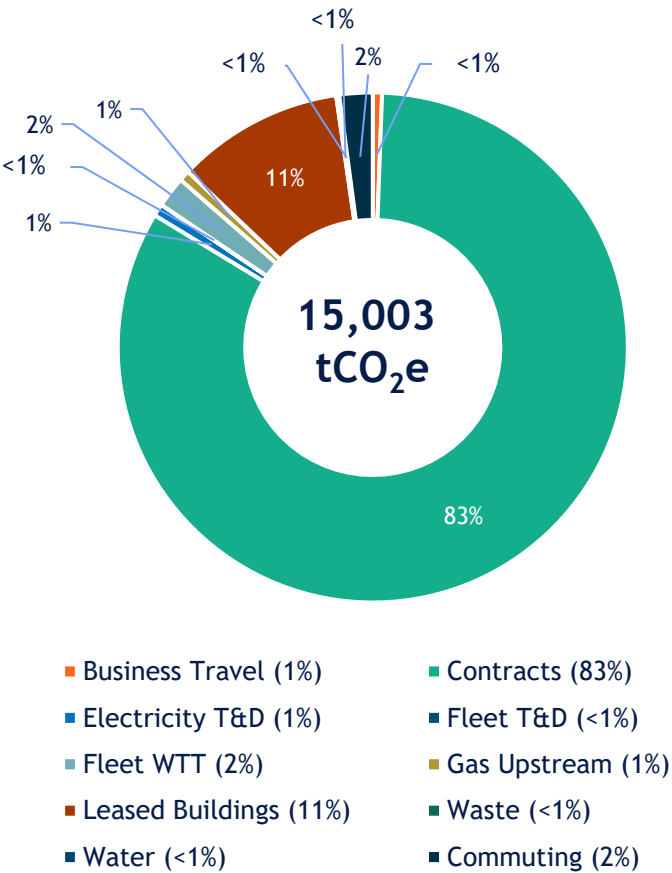
ADDRESSING SCOPE 3

Your Scope 3 emissions comprise a significant proportion of your emissions. We recommend addressing your Scope 3 emissions in a separate target to your Scope 1 & 2. Since all Scope 3 emissions lie outside of your direct control, we advise focussing your target on two selected emissions subgroups, associated with your **Contracts**, and **Leased Buildings**.

In coming this judgement, we have considered:

- **Your level of influence within Scope 3-** we consider your contracts and leased buildings to be within your *stronger influence*
- **Addressing a significant proportion of your Scope 3 emissions-** To be meaningful, your Scope 3 target needs to cover a significant proportion of your Scope 3 emissions. We recommend following the SBTi guidance for Scope 3 targets: where Scope 3 emissions exceed 40% of your total emissions, the target must address over 2/3 of your emissions. Your Scope 3 emissions comprise 81% of your total emissions.
- **Resource Efficiency-** How to provide an efficient way for you to address a large volume of emissions (administrative capacity, cost), while also stimulating low carbon development in the district. We believe this applies strongly to emissions associated with your contracts.
- **Building synergies** within sectors and between targets, to maximise impact. (For example, your retrofit policies for your operated buildings could also be applied to owned and leased buildings)

Scope 3 emissions breakdown by source



03 – SETTING A TARGET

SCOPE 3 - TARGET RECOMMENDATION

We recommend Horsham District Council set a **Carbon Neutral by 2050** target for your Scope 3 emissions associated with **Procurement and Leased Buildings**.

Why set this target?

- **Considering the level of ambition-** the inherent challenges in reducing your Scope 3 emissions which mean that a differing level of ambition to your Scope 1 and 2 is suitable.
- **Setting a defined boundary** - choosing which Scope 3 emissions you wish to address helps you to focus on those emissions you are most able to influence. By choosing to follow the SBTi guidance to cover a “significant” portion of your emissions, you are surpassing the minimum threshold for action.
- **Influencing your suppliers-** In setting a Scope 3 target, SBTi guidance recommends supplier engagement as a key route to achieving emissions reductions- by addressing all emissions associated with your contracts, you are ideally positioned to do this.
- **Considering offsets** - Similar to your Scope 1 & 2 target, in setting an absolute linear reduction target, offsets can be explored
- **Wider ambitions** - This target mirrors the UK’s target to become Net Zero by 2050, which will have far reaching cross-sectoral impacts on the low carbon transition. Working in parallel with this target positions you to benefit from the wider systemic changes stimulated, particularly as these emissions primarily lie in the district, outside your direct control.

03 – SETTING A TARGET

SCOPE 3 – FURTHER RECOMMENDATIONS

Other actions available to you around Scope 3

- Advocate for improved Scope 3 data. Our review of your Scope 3 footprint revealed some data quality issues. Resolving these will improve confidence and position you to target emissions hotspots as part of any future strategy development.
- Explore setting a district wide carbon target. This will enable you to much more directly address your Scope 3 emissions and makes it easier to engage local stakeholders who are currently harder to reach.

Justifying this level of ambition

Setting this wide ranging Scope 3 target can seem daunting and will require buy-in across the organisation. In securing this, we suggest highlighting:

- **Global Carbon budgets-** Your Scope 3 (or “consumption based”) emissions, as a proportion of your total emissions, are much bigger than the districts' own, highlighting the need to address these in the spirit of the global carbon budgets.
- **Benefits in the wider district-** Since many sources of Scope 3 emissions occur in the district, the area will stand to benefit directly through your efforts, both in terms of carbon savings, and wider co-benefits (e.g. cleaner air, warmer housing).
- **Financial benefits-** When addressing the impacts of your suppliers and contracts, financial benefits can be generated through emissions reductions. These are likely to be passed on to your own organisation.
- **Scope 3 emissions are moving up the agenda-** Consumption based emissions are receiving increased scrutiny more generally, with reports from the likes of the [UK Green Building Council](#), and [C40 Cities](#) advocating for improved emissions reporting methodologies. Improved Scope 3 reporting increases its credibility in decision making, facilitating carbon reduction actions.

03 – SETTING A TARGET

H) NEXT STEPS

As next steps, Anthesis recommends:

- Formally approve your Carbon Targets for Scope 1&2, and Scope 3, and publicly declare your commitments through press releases, social media, and website updates.
- Review your climate action plan and begin to chart a course to achieve your target. Ensure your carbon target is embedded in your governance structures. Policies, incentives, processes and controls should align with the target.
- Establish internal data management protocols to ensure your progress against the target is rigorously tracked on an annual basis. This should include:
 - An annual carbon footprinting exercise. This can follow a consistent method to allow comparability and keep costs down.
 - Using the indicators provided in the Action Plan, review progress against your carbon reduction initiative
- Undertake a comprehensive review of your Scope 3 emissions to increase confidence.
- Use the internal buy-in and learnings gained through this report and your organisational target to begin a dialogue around a district-wide climate target. In turn, setting a district wide target will empower you to better influence your scope 3 emissions. Setting a district wide target encourages innovative solutions and shares the responsibility, stimulating action on the ground.

04 Action Planning



04 – ACTION PLANNING

A) INTRODUCTION

Urgent emissions reductions activities are required to be undertaken by HDC for them to achieve the target recommended in Section 3 of this report. This Carbon Reduction Action Plan is focused on actions that HDC should consider deploying directly in support of their chosen climate target. Please note that costs and savings are based on proxies and should only be used to provide an idea of magnitude. The appendices provide further detail on the methodology behind our calculations of carbon impacts and costs, and the associated assumptions.

04 – ACTION PLANNING

INTRODUCTION

Building the case for action

Horsham District councillors have acknowledged in a notice of motion that they are committed to developing a plan of practical changes they can implement to work towards a zero-carbon target. This action plan has been developed to meet that commitment. In Chapter 3, we recommended that the council can now take their commitments further by publicly pledging a climate target. In doing so, the council will be acknowledging the challenge ahead, and making a statement of intent to drive the aggressive systemic changes required. This will provide further impetus for uptake of the action plan.

The actions available to you vary substantially in terms of cost, impact, and ease of implementation. To help you prioritise where to act first, we have provided further commentary on 1) How we prioritised which actions to include (see Appendix), and 2) How HDC should prioritise the actions moving forward.

Considering Co-benefits

It is widely accepted that decarbonising will offer many co-benefits. These include:

- **Health improvements** - Due to cleaner air, warmer homes, more exercise and better mental health.
- **Economic improvements** - Less lost time due to traffic congestion, job creation in the low-carbon sector, operational cost savings via increased energy efficiency and waste reduction
- **Biodiversity improvements** - Investments in green infrastructure and nature based solutions to climate change (i.e. tree planting, peatland management, etc.) can have a wide range of additional benefits including supporting biodiversity, water, soil and air quality.

However, recent science indicates that decarbonisation needs to accelerate, and as a result, not only are we forgoing opportunities to live better, healthier lives, we are exposing ourselves more severe climate change impacts. In the action plan, we have included commentary on anticipated co-benefits associated with each opportunity, to help you further build out the case for action.



04 – ACTION PLANNING

ACTION PLANNING PROCESS

Review of HDC Emissions Profile

- Review of emissions hotspots to identify priority areas for action.
- Determination of scope and boundary of target and associated actions.



Stakeholder Engagement Workshop

- Provide stakeholders with an opportunity to inform, critique and prioritise content for the Action Plan.
- Identify factors that may enable or challenge various council emissions reductions activities.



Initial Stakeholder Engagement

Calls with HDC sector leads to:

- Develop understanding of HDC's assets and organisational structures, informing our view of council influence.
- Discuss any pre-existing carbon reduction initiatives.
- Resolve any outstanding data related queries.



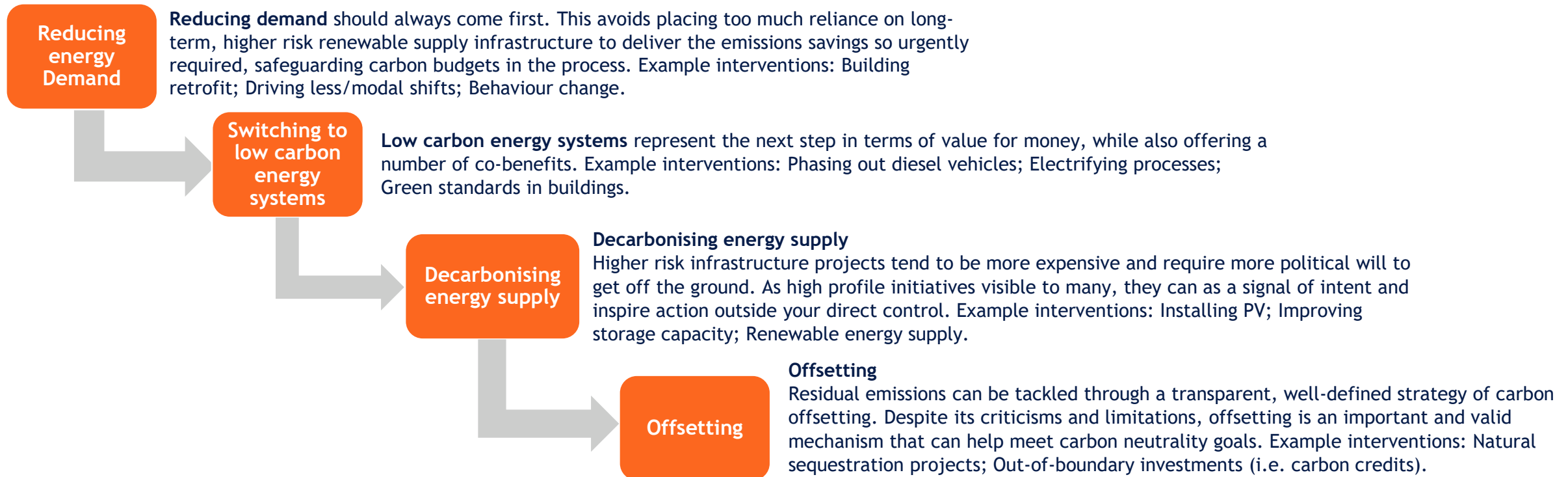
Further Research into proposed actions

- Consideration of stakeholder comments to develop ideas further, prioritise, and finalise action plan content.
- Assessment of the potential of proposed actions in terms of cost, benefits and implementation.

04 – ACTION PLANNING

PRIORITISATION YOUR ACTIONS

Being able to confidently prioritise actions is important for HDC as it begins to coordinate actions and projects. It can be helpful to refer to a defined hierarchy of actions when considering new initiatives.



This hierarchy is of course idealised and naturally the council's influence and key stakeholders may allow or encourage some actions to be implemented before others. Further details of prioritisation as it applies to the actions in the plan can be found in the appendix.

04 – ACTION PLANNING

NAVIGATING THE ACTION PLAN

We have presented the opportunities in this Action Plan by sector, in line with the process outlined in our commentary on prioritisation. Actions are grouped into various Sectors and then sub-sectors, referred to as Action Planning Groups as shown below (left). Each planning group is structured consistently as shown below (right).

Overview of action groupings per sector

Sector	Action Planning Groups
Transportation & Fleet	<ul style="list-style-type: none">• Demand Reduction• Alternative Fuels
Property	<ul style="list-style-type: none">• Behaviour change• New properties• Retrofit/ Energy Efficient Tech• Green Energy
Procurement	<ul style="list-style-type: none">• Sustainable Procurement
Parks & Countryside	<ul style="list-style-type: none">• Mapping Sequestration Opportunities• Protecting and Enhancing Stock

Detail provided per Action Planning Group



Introduction to the Sector
Overview of the HDC activities covered by this sector, key emissions hotspots, and key themes from stakeholder engagements.

Enabling Actions (if applicable)
Overview of any enabling actions required before implementation of the Carbon Reduction Action/s. These do not lead to a direct carbon saving. For example, it is essential to develop your supplier data reporting processes so you can fully evaluate their performance, before installing a Sustainable Procurement Policy.

Carbon Reduction Actions
Overview of recommended carbon reduction activities, including estimated impact and cost. For example, by implementing a Sustainable Procurement Policy and engaging your contractors accordingly, you will be creating a measurable carbon reduction in your value chain.

Wider Context and Delivery
Additional commentary around best practice, co-benefits, key legislation, and monitoring indicators.

04 – ACTION PLANNING

NAVIGATING THE ACTION PLAN

Glossary of terms

- **Description-** This provides an introduction to the overall goal the council will need to achieve. For Enabling Actions, we have clarified how this action enables further Carbon Reduction activities.
- **Estimated Cost-** Indicative potential capital and/or operational costs of each measure have been provided where possible. Due to limitations of budget and scope, this is not comprehensive cost analysis but provides an indication of relevant financial costs based on publicly available data. As such, we advise:
 - Associated assumptions are reviewed and fully understood by the Council
 - No reliance by the council (or any other party) should be placed on these figures due to the inherent limitations in assumptions - these are simply intended to help inform relative priority of actions and how more robust estimates could be performed.
- **Stakeholders-** Stakeholders identified within HDC who are best placed to manage the implementation of the action.
- **Carbon Saving-** An estimation of the magnitude of carbon savings that could be achieved by the action is included. Note this is an indication that should only be used to provide an idea of the scale of savings. It does not directly correspond to the achievement of the overall target. Potential co-benefits of the measures are also listed. Similar to Estimated Costs:
 - Associated assumptions are reviewed and fully understood by the Council
- **No reliance by the council (or any other party) should be placed on these figures due to the inherent limitations in assumptions - these are simply intended to help inform relative priority of actions and how more robust estimates could be performed.**
- **Implementation-** Here we provide detail on the steps to be taken in implementing the action, including any additional context in relation to HDC specifically. This includes specifying any relevant HDC processes or strategic priorities, clarifying (where necessary) which part of HDC's assets or footprint profile the action relates to, and any key barriers or opportunities raised in the stakeholder consultation session. We also provide a suggested timeframe for the implementation of the action.
- **Examples of Best Practice-** Case studies of similar actions.
- **Co-Benefits-** These are defined as the positive effects that a policy or measure aimed at one objective (i.e. Action Planning Opportunities) might have on other objectives. Considering co-benefits is useful in helping stakeholders build the case for action.
- **Monitoring Indicators-** Monitoring your progress around the action planning opportunities is important to track uptake and ensure continued performance. Here we provide example indicators which HDC may choose to apply.
- **Key Legislation-** Here we provide an overview of any key legislative drivers which could effect implementation of the action.

04 – ACTION PLANNING

B) COSTS

It is important to understand how costs should be considered when it comes to climate action. Not only the different types of costs that may apply to different measures, but also who will actually incur the cost and any associated benefits - in many cases there are options and impacts outside of the council.

“

The difference in cost between targets is less about absolute cost and scale of investment, and more about timing and when the investment is made

04 – ACTION PLANNING

COSTS – WHO PAYS AND BENEFITS

Cost considerations are a natural priority when making a climate commitment. Targets with the same end point in theory require the same level of investment. This implies that the difference between targets is less about absolute cost and scale capital investment, and more about the timing and when the investment is made. However, there are a few other cost impacts that in reality, may apply:

There are benefits in moving sooner:
There may also be associated ‘costs of inaction’ in delaying action.

For example:

- Health and economic impacts and co-benefits can be realised earlier
- Costs of retrofitting are more expensive than building properties lower-carbon first time. The [Committee on Climate Change](#) estimates this could be 5-times more.
- Lower operational costs of buildings will pay-back sooner, especially if energy prices increase.
- You are less likely to incur costs associated with climate change and more frequent extreme weather events, if you play your full part to keep within the recommended carbon budget.
- Your role as a leader may inspire other organisations and help to stimulate the market, allowing future economies of scale to be realised by others, along with the other benefits above.

However, there may also be additional costs:
These may be linked to subsequent economies of scale being generated as demand for low carbon technology and services increases.

For example:

- Manufacturing costs *may* fall as production of low carbon technology is scaled up
- Supply of skilled labour *may* become more accessible and greater over time
- Marginal technology efficiency improvements *may* continue over time too (but no ‘silver bullet’ or transformational change in low carbon technology is anticipated in the next 5-10 years)



04 – ACTION PLANNING

COSTS - DEFINITIONS

What do we mean by ‘cost’?

Throughout the plan, our ‘by proxy’ approach to cost has meant that we have included financial metrics, however, these are based on secondary research and were often included based on availability. It is important to note that a number of types of financial metrics that we have presented, that can mean very different things:

Capital costs	Operational / ‘Revenue’ costs	Resource / time costs	Savings / payback
For example, the cost of a EV, that is then recognised on a balance sheet and depreciated over its useful economic life	For example, monthly energy bills or asset maintenance that reduce the council’s annual surplus (profit)	Typically a type of operational cost, but expressed in units of time or full time employees, as a reallocation of an existing role may be possible	Many low carbon costs result in direct and indirect benefits, many of which are financial. It is important that any savings or payback periods are considered. This will give critical balance to the investment appraisal process

Who actually incurs the cost?

We are seeing an emergence of alternative forms of finance that can help accelerate carbon savings, but reduce the burden on needing to make significant capital outlays. For example, we are seeing many technology providers offer to provide the capital investment (at no cost to the council / tenant), in return for a share of the operational return. In this scenario, the council may not need to make any outlay (other than perhaps legal fees or time relating to contractual matters).

An example of technology provider and a district network operator (DNO) supporting low carbon capital investment at no cost to the tenant can be found [here](#). Energy Service Companies or ‘ESCo’s commonly able to offer this service if access to finance is limited.

04 – ACTION PLANNING

COSTS – WHO PAYS AND BENEFITS

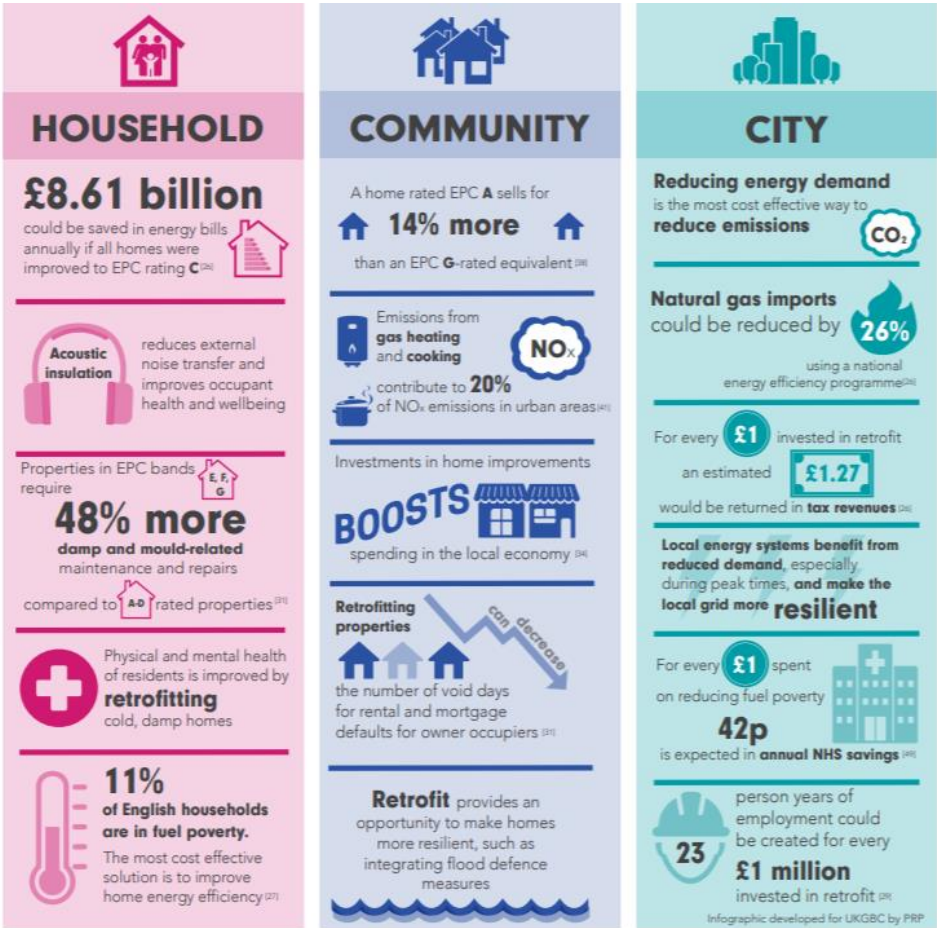
Are financial paybacks and up-sides incorporated into investment appraisals?

Commonly these are not appropriately measured or captured. This is often due to the co-benefits being realised in different budgets (e.g. operational budget holders not talking to capital budget holders) or departments (energy teams not talking to the asset managers).

At a district scale, it can often be difficult to attribute health savings to property or clean air investment; but as demonstrated with extracts opposite, these benefits do exist.



Example of the socio & economic impacts of unsustainable transport, which served as a motivator for increasing cycling networks in [Greater Manchester](#).



An example of socio & economic upsides of low carbon investment in buildings, as estimated by the [UKGBC](#).

04 – ACTION PLANNING

COSTS – COSTS OF ACTION VS COSTS OF OFFSETTING

HDC may seek to calculate a carbon saving per pound spent (£/tCO₂) to offer a basis for prioritising measures against each other. Comparisons may also be made against purchasing of carbon offsets. HDC must ensure any comparison against offsetting is fair and on 'like-for-like' terms. More broadly, we would caution against offsetting for the reasons outlined below:

Direct action comparison challenges

- **Cost 'category' needs to be compared like for like:** As illustrated earlier in this section, costs are categorised as capital, revenue, and/or other resources & time. Comparing a revenue cost of offsetting against just a capital cost of an investment in buildings won't tell the full story.
- **Include savings & co-benefits:** Many direct actions and projects also offer direct and indirect financial savings which need to be included. Over time, this will reduce the lifetime cost of the investment and may pay-back. Offsets do not currently offer any form of direct payback.
- **Timeframe needs to be compared like for like:** Comparing capital costs against 1 year of offsets would be misleading - the cumulative total of the offset would need to be equal to the lifetime of the capital asset. For example, if a building has a 50 year lifespan, the capital cost less revenue cost savings (on energy bills) would need to be compared to 50 x the annual offset cost.
- **Additionality of cost needs isolating:** Some investments may have needed to happen anyway; for example you may be required to make capital expenditure on assets that are coming to the end of their life. So considering how to decouple additional 'low carbon' spend from planned maintenance is important. For example, if a gas boiler needs replacing, it is important to look at the *additional* cost of a low-carbon heat pump relative to a gas boiler, rather than the cost of a heat-pump in isolation.
- **Consider other co-benefits:** The nuances of co-benefits and indirect savings of climate action are hard to quantify and could go unrepresented in a cost comparison, with the district standing to miss these if offsetting is prioritised. Often, health and productivity benefits go un-measured.

Offsetting challenges

- **Diverse range of price and quality:** There is a big range in offset prices and quality offsetting options, making it difficult to find a single point of comparison
- **Prices of UK based offsets are increasing:** Demand for offsetting is increasing, pushing up the price of UK based certified offsets up
- **Annual cost without ROI:** Offsets are required to be purchased every year, and typically offer no return on investment (if out of the district boundary)
- **Negative public perceptions:** Offsets should typically be applied by councils as a "last resort" or temporary measure, where there is a lack of alternative technologies, or speed of implementation is a factor.
- **Diversion of co-benefits:** Many existing certified schemes may divert public money and co-benefits of actions outside of the district

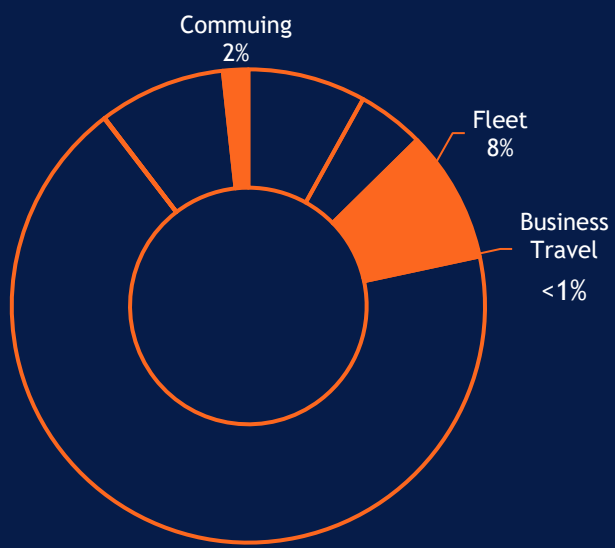
04 – ACTION PLANNING

COST – COMMON FUNDING MECHANISMS

Potential funding mechanisms to support carbon reduction. This list is by no means exhaustive and other mechanisms may also be available.

Type	Description	Examples
National Level Funding	There are a variety of national initiatives that could be utilised to provide funding for climate change projects including: ECO funding, Sustainable Transport Fund, Salix Finance.	<u>Southampton City Council</u> - worked with <u>Salix Finance</u> (interest free government funding) to deliver energy efficiency projects in eight of their schools.
European Funding	There are several EU grants available to support local climate change projects including: LIFE Climate Action, European regional development fund (ERDF), European social fund (ESF).	<u>Homes as Energy Systems (HAES)</u> - ERDF and Retrofit Works Project, Greater Manchester, includes 3 projects in Stockport.
Section 106	A financial contribution used to mitigate the impact of new developments on infrastructure and communities.	<u>Waltham Forest</u> - using Section 106 funding from new developments to improve walking and cycling infrastructure
Community Infrastructure Levy	A charge which can be levied by local authorities on new development in their area to deliver infrastructure. (Tariff-based)	<u>City of London</u> - allocated to broad infrastructure spending priorities: public realm and local transport improvements (40%); social and community enhancements (10%); and open spaces (5%).
Workplace Car Parking Levy.	This could be an annual fee paid by businesses with 10+ parking spaces. The fund can be used to improve local infrastructure.	<u>Nottingham City Council</u> - introduced a parking levy which has been used to fund extensions to the existing tram system.
Crowdfunding and Municipal Community Bonds	See <u>Financing for Society: Local Authority Guide</u> for information about crowdfunding as a potential model of finance for the public sector.	<u>Swindon Borough Council</u> - used a crowdfunding platform to raise a total of £4.3m to operate a solar park.
Local Taxation	Explore opportunities to leverage local taxation.	<u>Various Councils</u> nationally are considering how Business Rates could better stimulate lower carbon action and investment. No published info at present.
Revenue Generation Projects	Potential to generate finance from renewable energy or congestion charge.	<u>Telford & Wrekin Council</u> 4MW ground mounted solar farm, on agricultural land owned by the council. Generates a profit of approximately £150k/year with a project lifetime of 25 years.

04 – ACTION
PLANNING
C) TRANSPORTATION
& FLEET



Total 2018/19 footprint with emissions from Transport and Fleet highlighted.

11% of total footprint

63% of Scope 1 emissions

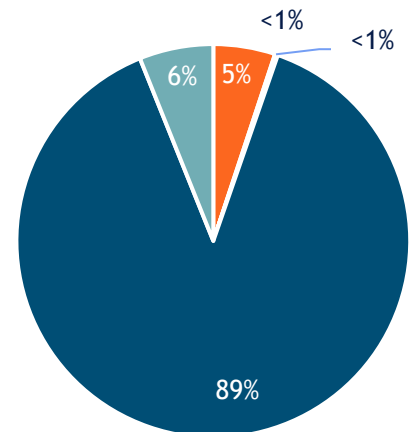
The emissions from transport and fleet were estimated as **1,913 tCO₂e**. Fleet makes up 63% of Scope 1 emissions, with the majority of this produced by the council’s refuse fleet vehicles (89%). Transport also comes into Scope 3 emissions when accounting for transportation of fuel (WTT) and staff travel in terms of business travel and commuting. Although, staff travel is not within direct control of the council, the behaviour of staff is within its influence and cost-effective. Upstream WTT is classed as weaker control as it is difficult for the council to reduce this alone.

There were several opportunities discussed for this sector given that a number of interventions in this sector have already been implemented during COVID-19.

Transport emissions breakdown by scope

Emission Source	2018/2019 tCO ₂ e
Scope 1	
Fleet	1,248
Scope 2	
EV Fleet	2
Scope 3	
Fleet (WTT)	295
EV Fleet (T&D)	<1
Business Travel	70
Commuting	316
Total	1,931

Scope 1 and 2 emissions breakdown by vehicle type



	No.	tCO ₂
■ Cars (5%)	11	79
■ Electric cars (<1%)	3	2
■ Grounds maintenance vehicles (<1%)	2	2
■ Refuse truck (89%)	29	1370
■ Vans & HGVs (6%)	18	94

04 – ACTION PLANNING

TRANSPORTATION & FLEET – ACTION PLAN- CARBON REDUCTION

Priority 1: Demand reduction

Reduce car journeys by employees by reducing the distance travelled/fuel consumption and encouraging alternative modes of transport.

Actions	Description	Estimated Cost	Carbon saving	Stakeholders	Implementation
Route Optimisation for Refuse Collection Vehicles (RCVs)	Explore route optimisation software and monitoring for reducing mileage of refuse collection vehicles and the number of vehicles	Dependent on chosen software/ technology - offset by fuel savings	95 tCO ₂ e	Transport manager, working in conjunction with Waste	<p>Given the time constraints and costs involved in replacing LGVs entirely, this could form a key action to reduce emissions in the short term at relatively lower cost. Improvements in route efficiency could also ultimately reduce the requirement for RCV's altogether. Anthesis understands HDC has already undertaken a limited trial of route optimisation, with some of the fleet, but this is not yet extended to RCV's.</p> <ul style="list-style-type: none"> Review current route maps and vehicle numbers Assess technology providers available and best practice form other Local Authorities. Assess whether any vehicles can be decommissioned. <p>Timeframe: <1 year</p>
Eco-training for drivers	Equip any drivers of council vehicles with the necessary knowledge to more appropriately plan journeys to help make driving more efficient and reduce fuel consumption	The Energy Saving Trust currently offer subsidised driver training programmes. Approximately £2,000	53 tCO ₂ e	Transport manager, likely in coordination with HR	<p>Our stakeholder consultation showed low awareness of the benefits of this programme within HDC, so a staff engagement programme could be required before launch.</p> <ul style="list-style-type: none"> Introduce a fleet management system and telematics to monitor fleet usage and mileage. Establish who should benefit from driver training and organise training sessions. <p>Timeframe: 1 year</p>

04 – ACTION PLANNING

TRANSPORTATION & FLEET – ACTION PLAN- CARBON REDUCTION

Priority 1: Demand reduction

Actions	Description	Estimated Cost	Carbon saving	Stakeholders	Implementation
Working from Home assessment	Conduct travel survey of staff to calculate footprint to inform working from home policies. It is necessary to assess this given that the carbon savings achieved through reducing travel may not be balanced by the additional energy required to heat homes.	Additional staff resource for 2-3 month project	126 tCO ₂ e (not including additional costs for home heating)	HR Department	<p>In exploring this opportunity, consideration of the impact of the ongoing COVID-19 pandemic is recommended: stakeholders have advised that Working from Home habits have changed substantially since lockdown, and this could be the primary driver of behaviour change. Nevertheless, a staff assessment will help to better understand the carbon impact of any such behaviour change. In the longer term, should HDC wish to act on any change to working patterns, it is expected that the property team lead the ongoing conversation around the suitability of the main office as a working space.</p> <ul style="list-style-type: none"> • Assessment of staff travel - this requires some understanding of the distances and mode of transport used for commuting. • This must consider the impact on emissions for the district as emissions may be passed from the council to individuals and actually increase emissions in the district if homes are inefficient. (See Box 1) • Assess the suitability of each department for staff to increase home working. <p>Timeframe: 1 year</p>

04 – ACTION PLANNING

TRANSPORTATION & FLEET – ACTION PLAN- CARBON REDUCTION

Priority 1: Demand reduction

Actions	Description	Estimated Cost	Carbon saving	Stakeholders	Implementation
Greener commuting	Encourage active travel or public transport for commuting through offering incentives and providing facilities to support this	No cost to council unless they invest in further schemes/facilities E.g. Cycle Parking: Bike stands: £30-£40 Covered parking: £1,800 plus stands Lockers: £620+ per locker	Increasing those who walk and cycle to 25% saves 21 tCO ₂ e	HR Department	<p>This may be difficult to assess currently. There are already some schemes in existence to encourage lower carbon commuting.</p> <ul style="list-style-type: none"> • If conducting a travel survey for staff include questions of what would encourage staff to use active travel. • Explore the possibility of providing incentives such as financial rewards to free breakfasts for greener commuting. • Review the facilities and schemes available to staff to encourage green commuting. • Explore potential to join West Sussex car sharing scheme post-COVID-19 and become a member of an easit network or similar. <p>Timeframe: 2 years</p>
Reducing overall business travel and encouraging active travel modes for necessary business travel	Encourage active travel or public transport for business travel through offering incentives and providing facilities to support this	As above	15 tCO ₂ e	HR Department	<p>Opportunity to build on current practices from COVID-19 of virtual meetings. Important to prevent a return to car use by encouraging active transport.</p> <ul style="list-style-type: none"> • Similar to commuting, review the current modes of travel and barriers facing low carbon business travel. • Consider ways to incentivise this. • Improve monitoring of business travel mileage. <p>Timeframe: 2 years</p>

04 – ACTION PLANNING

TRANSPORTATION & FLEET – WIDER CONTEXT AND DELIVERY

Priority 1: Demand reduction

Examples of Best Practice

Oxford City Council All registered drivers at the council were required to complete the EST smarter driving course. This achieved a 17% reduction in fuel use in the first year. This level of reduction could save the council an estimated £69,000 and 150tCO₂ per year.

Brighton and Hove City Council have a staff travel plan is a policy document for staff designed to reduce car use and provide improved travel options for employees both in journeys to and from work and within the working day. This staff plan is include as part of the induction process. There is also an easit network in the city which includes discounts on rail and bus.

Monitoring Indicators

- Business travel mileage and mode
- Employee commuting mileage and mode
- Distance travel by RCVs
- % staff trained in eco-driving

Key legislation

- Active travel: a briefing for local authorities
- In May 2020, the UK Government announced a £250 million emergency active travel fund, which is the “first stage of a £2 billion investment, and part of the £5 billion in new funding announced for cycling and buses in February.” The Government also published fast-tracked statutory guidance for local authorities to “make significant changes to their road layouts to give more space to cyclists and pedestrians”.
- The Department for Transport Cycling and Walking Investment Strategy aims to make cycling and walking the natural choices for shorter journeys

Co-benefits

- Increasing physical activity could save the NHS £17bn within 20 years by reducing the prevalence of conditions such as type 2 diabetes and heart disease.
- Reduced congestion- sustainable transport can help reduce the number of vehicles on the road.
- Encourages safer driving practices.
- Reduction in mileage can also reduce fuel costs.

Box 1: Working from Home considerations

It is important to consider the carbon usage of an employee working from home. This is mainly dependent on the level of heating required, however there is limited evidence on the change in energy consumption of home workers. The effectiveness is also dependent on the avoided emissions associated with each commute e.g. distance, vehicle, number of passengers, age of vehicle, however this data is not available for HDC. Using averages from the Carbon Trust, a commuter would have to travel 4 miles to work (one-way) to balance the average increase in home energy consumption 180 kg CO₂e. It recommended that this is assessed for Horsham by consulting staff and measuring the impact of the current home working changes implemented under COVID-19.

04 – ACTION PLANNING

TRANSPORTATION & FLEET – ACTION PLAN- CARBON REDUCTION

Priority 2: Alternative Fuels

Switch to alternative low carbon vehicles and fuel for council fleet.¹

Enabling Actions	Description	Estimated Cost	Stakeholders	Implementation
Increase EV charging infrastructure	Continue to work with West Sussex CC to co-ordinate installation of charge points in the district as well as onsite charge points.	50kW charging point: £17,000-£33,000. Note this does not include an estimate for renewable energy generation.	West Sussex County Council and Transport manager	This is an ongoing initiative with West Sussex County Council to increase charging points into the county. <ul style="list-style-type: none"> Continue working with County Council to map electric charging points in strategic locations across the district. Assess the need for installation of additional capacity at office and workshop sites. Timeframe: <5 years

Actions	Description	Estimated Cost	Carbon saving	Stakeholders	Implementation
Trial low carbon Large Goods Vehicles (LGVs)	Ultimately, HDC should aim for zero carbon HGVs, however there is yet to be an established alternative. Therefore, HDC should seek funding to trial low carbon LGVs/HGVs and alternative fuels, with the long term goal to switch all LGVs. Estimates provided are based on switching to electric RCVs.	An electric RCV costs approximately £201,580 (£5,845,820 for whole fleet) more than equivalent diesel RCVs. However, the lower running costs of an electric RCV mean that the total cost of ownership is £29,608 greater for an electric RCV over its lifetime (£858,632 for whole fleet).	1,110 tCO ₂	Transport manager	The council fleet currently contains nearly 30 large goods vehicles. Through discussions with HDC, it is understood that the LGV fleet is relatively new, and there are currently no plans to replace vehicles until around 2027. However, early replacement of some vehicles for a trial is feasible. Cost constraints (particularly in light of COVID-19) mean additional funding would be beneficial in achieving this- leasing could also be an option. <ul style="list-style-type: none"> Review alternative fuels and the options available for low carbon LGVs e.g. it is difficult to evidence costs for hydrogen fuel at the time of writing so this could be reviewed. Explore and seek funding opportunities for trialling low carbon LGVs. Consider partnering with local businesses developing alternative fuels. Timeframe: 3 years

04 – ACTION PLANNING

TRANSPORTATION & FLEET – ACTION PLAN- CARBON REDUCTION

Priority 2: Switch to alternative low carbon vehicles and fuel for council fleet.

Actions	Description	Estimated Cost	Carbon saving	Stakeholders	Implementation
Switch to EV cars/vans	Switch 100% of car/van fleet to electric vehicles when undergoing fleet replacement.	<p>An additional £1,350,000 above the cost for Euro VI for the whole car/van fleet. However, the lower operational costs of EVs mean that over the lifetime of the vehicles the additional cost would be £930,000 above Euro VI. (This does not factor in any programme of replacement).</p> <p>The Energy Saving Trust offer a free Ultra-Low Emissions Vehicle review</p>	<p>107 tCO₂e (100% switch powered by grid)</p> <p>164 tCO₂e (100% powered by renewable generation)</p>	Transport manager and procurement team	<p>At present it is understood that the HDC fleet has a turnover of around 6 vehicles/ year, so our estimation of 30 vehicles over a 5 year period is credible, if a compelling case can be made. Potential barriers cited include a lack of charging infrastructure and concern over battery life- these could be addressed through the anticipated increase in Charging Infrastructure. HDC already operate 3 EVs (1 car and 2 vans).</p> <ul style="list-style-type: none"> • Review cycle of replacement for vehicles and develop a strategic plan for vehicle replacement. • Assess capacity for renewable energy generation on site. • Educate staff on EVs and address concerns over mileage etc. Upskill drivers and mechanics. <p>Timeframe: 5 years</p>

04 – ACTION PLANNING

TRANSPORTATION & FLEET – WIDER CONTEXT AND DELIVERY

Priority 2: Switch to alternative low carbon vehicles and fuel for council fleet.

Examples of Best Practice

Leeds City Council have electrified 16% of their total van fleet. It is estimated that these vehicles will travel 450,000 miles per year leading to fuel savings of £13,500 per year and savings of 52 tCO₂ to 2020.



Cheshire East Green Hydrogen Refuelling- Cheshire East Council are working with Storengy under a £1m funding scheme to trial two hydrogen bin wagons. The hydrogen will be produced in the least carbon intensive way at a new facility in the borough. It is supported by both public and private sector funding a grant from the LEP.

Nottingham City Council was part of a pilot EU funded scheme, CleanMobilEnergy3 to roll out electric vehicle waste collection trucks powered by renewable energy through a smart energy management scheme.

The City of London will be the first council to implement a fully electric fleet, as part of a new contract with Veolia, whilst several other councils, including Sheffield and Westminster, are also trialling the technology

Monitoring Indicators

- Number of charging points on council property and in the district
- % of fleet that is low emission
- Air quality monitoring

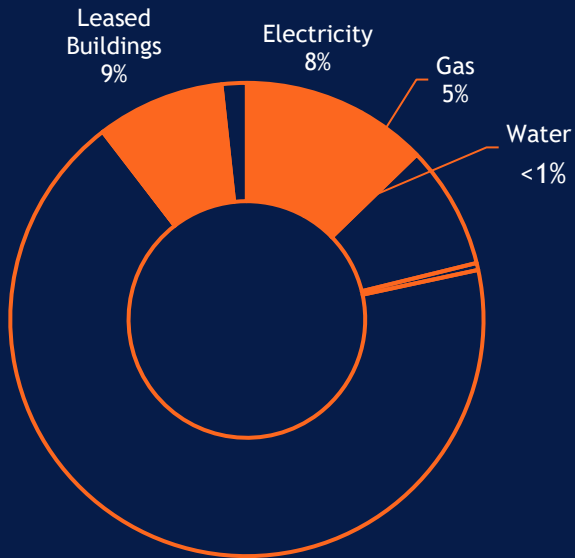
Co-benefits

- Financial benefit of electric vehicles- Electric vehicles can offer substantial fuel savings. For instance, electric cars typically cost £2-£4 to fully charge, for a range of 100 miles where as a petrol or diesel car costs £13 to £16 to drive 100 miles (approximately 5 times more).
- Improvement in air quality - The cost to the economy of pre-mature deaths related to poor air quality is estimated to be £54bn a year.
- Improving air quality can also help to reduce health inequalities - air pollution levels have been found to have strong association with deprivation levels.

Key legislation

- The UK government has the ambition to stop the sale of petrol and diesel cars by 2040 and instead switch entirely to electric vehicles.
- Go Ultra Low is a national scheme aiming to inform and promote the savings associated with switching to EV.
- UK Road to Zero Strategy - The Road to Zero Strategy sets out a path for Britain to be a world leader in the zero-emission revolution

04 – ACTION
PLANNING
D) PROPERTY



Total 2018/19 footprint with emissions from Property highlighted.

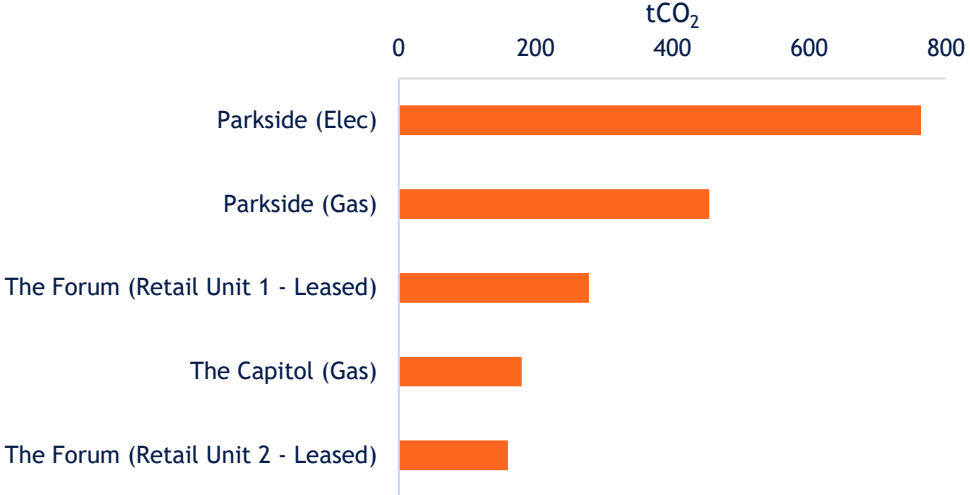
21% of total footprint
63% of Scope 1 and 2 emissions
12% of Scope 3 emissions

The emissions from property were estimated as 3,927 tCO₂e which represents over one fifth of the councils total footprint. As the largest emissions category for Scope 1 and 2 emissions (gas and electricity), it is important that the council review their own operations and properties in order to reduce emissions. Property also makes up a significant proportion of Scope 3 emissions through leased buildings. Although this is not within direct control, the council must work with tenants to go beyond national legislation.

Property emissions
breakdown by scope

Emission Source	2018/2019 tCO ₂
Scope 1	
Gas	735
Scope 2	
Electricity	1,363
Scope 3	
Gas Upstream	102
Electricity T&D	116
Water	21
Leased buildings	1,590
Total	3,927

Top 5 emitting properties (all scopes)

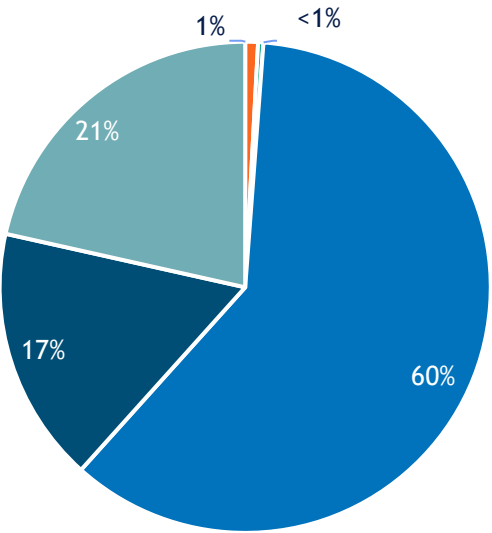


Building Name	Emissions Category	2018/2019 tCO ₂
Parkside	Electricity (+ T&D)	764
Parkside	Gas (+ upstream)	454
The Forum (Retail Unit 1)	Leased Building	278
The Capitol	Gas (+ upstream)	180
The Forum (Retail Unit 2)	Leased Building	160

04 – ACTION PLANNING

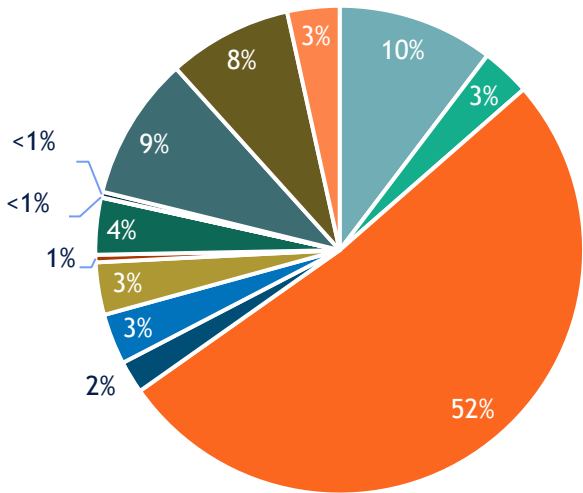
PROPERTY– FURTHER ANALYSIS

Scope 1 property emissions by building category



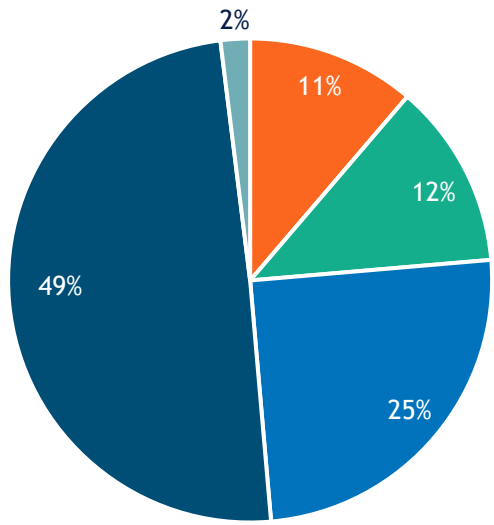
	No.	tCO ₂
Emergency Services (1%)	1	6
Nature Reserve (<1%)	1	3
Offices (60%)	2	444
Residential (17%)	36	124
Theatre (21%)	1	158

Scope 2 property emissions by building category



	No.	tCO ₂
Car Park (10%)	12	141
Main Council office; occupy one floor* (52%)	1	704
Offices (3%)	5	46
Public Lighting (<1%)	3	7
Retail (<1%)	2	0.3
The Forum (9%)	1	129
Workshop and office (3%)	4	47
Community Facility (3%)	7	44
Museum and Offices (2%)	1	29
Other (3%)	10	47
Residential (4%)	43	51
Storage (<1%)	3	5
Theatre (8%)	1	112

Leased buildings (Scope 3) emissions by building category



	No.	tCO ₂
GP Practice/Dentist (11%)	5	179
Industrial Buildings (12%)	44	197
Offices (25%)	18	397
Retail (49%)	41	786
Sports and Recreation (2%)	2	31

04 – ACTION PLANNING

PROPERTY– ACTION PLAN – ENABLING ACTIONS

Priority 1: Behaviour Change

Reducing energy demand based on how the buildings are used.

Enabling Actions	Description	Estimated Cost	Stakeholders	Implementation
Better report and feedback on energy consumption	Report on carbon emissions from buildings annually and feedback to staff.	Within existing staff resources.	Carbon Reduction Project Team.	<p>This is focused on properties that the council operates. Council staff will begin conducting their own footprint assessment this year so there is an opportunity to upskill individuals in carbon estimations and develop internal communication around the annual footprint.</p> <ul style="list-style-type: none"> • Upskill individuals for annual calculation of footprint and how to estimate emissions from consumption data. • Develop an internal communication strategy for raising awareness of this. • Share progress on reductions in consumption so staff can see how their actions can make an impact. <p>Timeframe: <1 year</p>
Mandate consumption data from tenants	Work with tenants to gather carbon footprint or energy consumption data. In order to assess any progress made by tenants, data needs to be provided. The current method for estimation is based on typical consumptions per building type so will not reflect reductions achieved or support investment cases.	<p>Within existing staff resources.</p> <p>Potential to use consultant for webinars.</p>	Property team and tenants.	<p>This is focused on the properties the council owns but leases out to a third party. The council do not currently receive data from tenants to include in their footprints, however it was felt that it would be possible to ask for this from tenants.</p> <ul style="list-style-type: none"> • Develop a template for tenants to report carbon emissions or energy consumption data. • Hold a webinar/forum on this with all lessees to ensure understanding and that they are on board (voluntary basis). <p>Timeframe: <2 years. To be included in next footprint.</p>

04 – ACTION PLANNING

PROPERTY– ACTION PLAN- CARBON REDUCTION

Priority 1: Behaviour Change

Actions	Description	Estimated Cost	Carbon saving	Stakeholders	Implementation
Raise staff awareness through carbon literacy training	Raise awareness of energy demand reduction activities amongst staff through a campaign and training.	~£5,000 for education programme	117 tCO ₂ e	The HR team could co-ordinate training of all staff	<p>Behaviour change of staff was cited as an important part of reducing energy demand.</p> <ul style="list-style-type: none"> • Explore options for climate change awareness training or campaigns available. Further research required to assess how best to deliver training. • Train senior leadership team and key officers in the council. Expand to all staff and councillors. • Embed into new starter training and performance reviews. • Share examples of best practice. <p>Timeframe: Train 50% of staff < 1 year</p>
Guidance for tenants	Produce guidance for tenants on energy efficiency (technology and behaviour change) and energy supply.	Additional staff resource - 0.5 FTE	<p>20 tCO₂e</p> <p>*Note this does not factor in savings from behaviour change or renewables</p>	Property team	<p>This is addressing the properties the council owns and leases out to third parties. It was felt that it may be difficult to influence tenant and make a business case for changes so providing guidance and education can help to address this.</p> <ul style="list-style-type: none"> • Write to all tenants to make them aware of the councils target and commitments. • Consult tenants on where there is a gap in understanding. • Provide guidance and share own experiences on energy efficiency technologies, staff training and best practice.

04 – ACTION PLANNING

PROPERTY– ACTION PLAN- CARBON REDUCTION

Priority 1: Behaviour Change

Actions	Description	Estimated Cost	Carbon saving	Stakeholders	Implementation
Decommission buildings	If there is a long term behavioural shift of staff to working from home then the council could explore decommissioning buildings. However, it is important that these emissions are not just passed onto the others in the district and it is encouraged that decommissioned buildings are sold for redevelopment.	<p>Agency & transaction fees would be incurred as part of the sale.</p> <p>Cost savings will be achieved through avoidance of energy bills and business rate charges from new tenants.</p>	137 tCO ₂ e (average office building)	Office workers and property team	<p>There was a general consensus that working from home had worked well and would be an easy to implement option. However, this must consider the impacts beyond the building. For instance, assessing the impact on the emissions of home workers heating their own homes. This may also just pass emissions onto another stakeholder in the district which does not contribute to reducing the emissions of the district and will not support the council's corporate plan.</p> <ul style="list-style-type: none"> • Work with the transport team and HR team to assess long term changes in commuting behaviour post-Covid 19. • Review building use and demand. • Ensure that any assessment on decommissioning includes a consideration of the impacts on the wider district and aims to mitigate this by encouraging redevelopment to a high standard.

04 – ACTION PLANNING

PROPERTY– WIDER CONTEXT AND DELIVERY

Priority 1: Behaviour Change

Examples of Best Practice

Manchester City Council have trained over 1,000 members of council staff in carbon literacy, with large scale training sessions underway for the top 300 managers.

Islington Borough Council raising awareness amongst staff of energy efficiency measures will save £43,000 and 196 tCO₂ per year.

Monitoring Indicators

- % of staff carbon literate certified
- Recognition awards for low-carbon behaviour / prizes
- Number of tenants engaged on climate change

Co-benefits

- Raising staff awareness and training programmes can increase buy-in to climate policies. Engagement helps to build consensus, which may enable the council to deliver more ambitious low carbon policies.
- Staff can take what they have learnt into their communities and spread the message beyond the council.
- Improvements made by tenants will also benefit the wider district's carbon footprint.



04 – ACTION PLANNING

PROPERTY– ACTION PLAN- ENABLING ACTIONS

Priority 2: Energy Efficiency

Reduce energy demand from council properties through improving building fabric and installing energy efficient appliances.

Enabling Actions	Description	Estimated Cost	Stakeholders	Implementation
Embed carbon into asset management strategy	<p>Integrate low-carbon retrofit into maintenance cycles and ensure carbon impact is considered in the operation of buildings.</p> <p>This will highlight opportunities where assets are to be replaced anyway, and costs for low-carbon substitution are therefore more marginal and more easily justified.</p>	Within existing budgets	Property Team	<p>There is already work underway by the property team at the council to map the 5 year plans in line with building upgrades.</p> <ul style="list-style-type: none"> Review Asset Management strategy and incorporate a way to assess and monitor the carbon impact of actions. <p>Timeframe: < 1 year</p>
Lobby national government	Lobby national government to increase the standards of building regulations and energy efficiency.	Minimal additional staff resource	Property Team	<p>There was discussion of legislative barriers from key officers in terms of building regulations and Minimum Energy Efficiency Standards which set the standards for building performance. The council should look to go beyond these regulations and lobby national government to increase standards. Whilst other parties and professional bodies can play a part in lobbying, this will help wider district activities in the future.</p> <ul style="list-style-type: none"> This involves responding to consultations, aligning and co-ordinating with other councils to demand the legislation necessary to achieve national targets. <p>Timeframe: < 6 months, ongoing</p>

04 – ACTION PLANNING

PROPERTY– ACTION PLAN- CARBON REDUCTION

Priority 2: Energy Efficiency

Actions	Description	Estimated Cost	Carbon saving	Stakeholders	Implementation
Retrofit owned buildings	Retrofit own-building stock to increase efficiency by upgrading insulation and heating systems.	Investment grade audits can be commissioned per building ranging £2,000-£5,000. Residential - retrofitting to Energiesprong standard - £4.9m Non-domestic buildings - £7.7 million. 1 FTE to support carbon reduction across property.	Residential- Energiesprong standard saves 145 tCO ₂ e Non-domestic buildings: retrofit saves 332 tCO ₂ e (Ashden estimate of insulation improvements) to 1,983 tCO ₂ e (zero carbon buildings) Total: 497 - 2,128 tCO ₂ e.	Property team	Work has already begun to map out 5 year plans for the property portfolio which should be continued. This action is aimed at council assets that are both owned and operated. There were concerns from some council officers on the cost-benefit of such retrofit and whether properties would still be owned by the council in the future. Carry out an assessment of the stock to identify potential programmes: <ul style="list-style-type: none"> - Data gap in-fills through site visits - Building performance modelling on key areas for improvements - Investment grade audits to identify opportunities to gain returns. Integrate with 5 year plan of building maintenance and map opportunities for building improvements. Demanding the highest energy efficiency standards when opportunities to retrofit arise. Timeframe: <10 years
Energy saving technologies	Ensuring that lights and appliances used in council buildings are the most energy efficient option.	Minimal	26 tCO ₂ e	Property team	This was identified as a good opportunity to reduce emissions by staff during consultation. This is applicable to properties the council operates, not those leased out. <ul style="list-style-type: none"> • Update procurement policy to ensure all council appliances and office items are sustainable and the most energy efficient. • Review opportunities to replace existing appliances and lighting. • Monitor energy usage and assess the impact of changes made. Timeframe: 5 years

04 – ACTION PLANNING

PROPERTY– ACTION PLAN- CARBON REDUCTION

Priority 2: Energy Efficiency

Actions	Description	Estimated Cost	Carbon saving	Stakeholders	Implementation
Energy saving technologies	For public lighting on streets and in car parks, the council should ensure they are operating at maximum energy efficiency.	~£350,000 to replace 1,000 streetlights	120 kgCO ₂ e per 1,000 streetlights	Property team	<p>The council has already seen improvements in this by switching gas lamp and realised significant energy savings. The property team would be responsible for assessing the current emissions and delivering a replacement programme.</p> <ul style="list-style-type: none"> Assess the footprint and opportunities to reduce consumption through switching to LED Lighting, sensors or reduced lighting. Develop a replacement programme, which also considers renewable energy generation as part of the design.
Retrofit properties let out when tenancies end	Seek opportunities when properties are vacant to retrofit/improve energy efficiency.	<p>Investment grade audits can be commissioned per building ranging £2,000-£5,000.</p> <p>Estimated cost of £12.1 m to retrofit all leased buildings.</p>	89 tCO ₂ e (Ashden estimate of insulation improvements) to 1,590 tCO ₂ e (zero carbon buildings)	Property team, working closely with tenants and prospective tenants	<p>From stakeholder discussions this was viewed as difficult to implement and would not necessarily equate to the council receiving higher rent values. However, leased buildings are the 2nd highest source of emissions for the council so important to target.</p> <ul style="list-style-type: none"> Review existing leasing arrangements and map potential opportunities for property improvement in line with refurbishment, maintenance or between occupancies. Communicate with tenants the importance and value of building improvements. <p>Timeframe: in line with leasing's contracts</p>

04 – ACTION PLANNING

PROPERTY– WIDER CONTEXT AND DELIVERY

Priority 2: Energy Efficiency

Examples of Best Practice

Cambridgeshire County Council adopted the Re:fit framework to increase energy efficiency, reduce CO₂ emissions and improve the condition of its buildings. The estimated potential of this scheme is to deliver 1.2 million tCO₂ savings over the lifetime of the project. The project is available to schools and public sector buildings in the county.

Monitoring Indicators

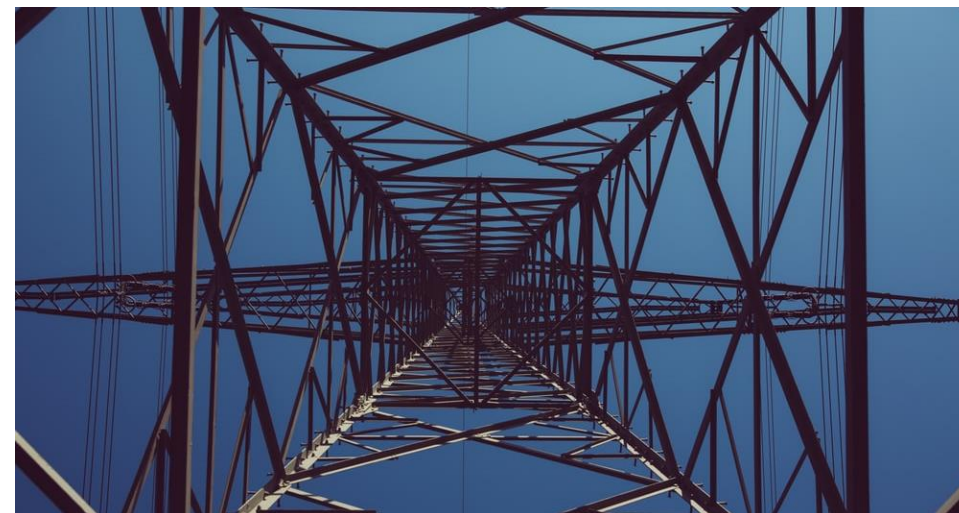
- Energy Performance Certificate ratings of council properties
- Display Energy Certificates (DECs) for public estate
- Energy efficiency ratings of appliances

Key legislation

- The Future Homes Standard provides an update to Part L of the building regulations
- Minimum energy efficiency standards (MEES) in the private rented sector and non-domestic property prevents landlords from letting properties rated below EPC Band E
- The Government's preferred target is that non-domestic property owners in the private sector achieve EPC band B ratings by 2030 across all properties
- Salix Finance has been working with Local Authorities for over 15 years, investing over £360 million in energy efficiency projects.

Co-benefits

- Job creation: Creation of jobs and upskilling of local people. Two-thirds of jobs in the low carbon and renewable energy economy are in energy efficiency products sector.
- Resilience: Greater protection against future energy price rises as well as being more physically resilient during heatwaves.
- Financial savings: Improving the energy efficiency of buildings can reduce energy bills for organisations and individuals.



04 – ACTION PLANNING

PROPERTY– ACTION PLAN- CARBON REDUCTION

Priority 3: Green Energy

Any remaining supply after demand reductions have been implemented should be supplied with green energy.

Actions	Description	Estimated Cost	Carbon saving	Stakeholders	Implementation
Increase renewable energy supply	Consider generating own low carbon energy supply with renewables e.g. solar.	<p>Additional staff time for energy opportunities mapping. £800,000 for a 1MW heat pump</p> <p>Current supply does not offer a significant saving on non-renewable energy bills, whereas self generation would.</p>	1,063 tCO ₂ e	Property and procurement teams	<p>Since the 2018/19 footprint was carried out, the council have procured a renewable electricity provider. They also have some solar PV installed at 3 sites. The next step would be to improve and increase on-site generation.</p> <ul style="list-style-type: none"> • At a minimum, challenge the quality/ nature of green energy provided and ensure it provides necessary benefits. • Explore pairing with disruptive energy providers that offer more tailored and holistic solutions for energy supply, usage, storage and generation. • Carry out energy opportunities mapping exercise and conduct a cost benefit analysis of installing own renewable electricity generation. • If generation on own property is limited, explore the potential for a Power Purchase Agreement (PPA) with other local organisations, or other commercial partners. Note, emissions reductions can only be realised if HDC use the energy, if they are an ‘offtaker’ and keep hold of the renewable energy generation certificates (REGOs).

04 – ACTION PLANNING

PROPERTY– WIDER CONTEXT AND DELIVERY

Priority 3: Green Energy

Examples of Best Practice

[Warrington borough council](#) are the first local authority to have 100% solar energy supply. Solar farm is located out of boundary and is connected locally to the grid; supply is thus offset rather than being locally sourced. [Forest Heath Council](#) own the solar farm at Toggam Farm, Lakenheath and have used the proceeds to plug funding gaps in frontline services

Monitoring Indicators

- Installed capacity (MW/kW)
- kWh generated

Co-benefits

- Revenue generation: Potential to reduce utility bills and generate a long-term source of income.
- Economic resilience: Local energy resilience and protection against future fossil fuel price increases.
- Job creation: Creation of jobs and upskilling of local people. In the UK, low carbon and renewable energy activities generated £44.5 billion turnover in 2017, directly employing 209,500 people (full-time equivalents).

Key legislation

- [UK National Energy and Climate Plan](#) sets out integrated climate and energy objectives, targets, policies and measures for the period 2021-2030
- The [UK government](#) has set a target to achieve 15% of its energy consumption from renewable sources by 2020.
- [Renewable Heat Incentive \(RHI\) Grant](#) has recently been refreshed and will offer capital grants. It helps businesses, public sector and non-profit organisations meet the cost of installing renewable heat technologies



04 – ACTION PLANNING

PROPERTY- ACTION PLAN- ENABLING ACTION

Priority 4: New Properties
Ensure that any new property built or bought into the portfolio meeting the highest green building standards. This is key for limiting the increase in the councils footprint with growth of the property portfolio.

Enabling Actions	Description	Estimated Cost	Stakeholders	Implementation
Lobby national government	Lobby national government to increase the standards for new properties in terms of energy efficiency. This is not intended to serve as a substitute for progressing other actions.	Minimal - additional staff resource	Property team	<p>This is in relation to Part L building regulations and MEES - the council should look to go beyond these regulations and lobby national government to increase standards. Whilst other parties and professional bodies can play a part in lobbying, this will help wider district activities in the future.</p> <ul style="list-style-type: none">• This involves responding to consultations, aligning and co-ordinating with other councils to demand the legislation necessary. <p>Timeframe: < 6 months, ongoing</p>



04 – ACTION PLANNING

PROPERTY– ACTION PLAN- CARBON REDUCTION

Priority 4: New Properties

Actions	Description	Estimated Cost	Carbon saving	Stakeholders	Implementation
High green building standards for new properties	If the Council were to develop new property ensure it is designed in line with the highest green building and energy performance standards e.g. LEED or BREEAM. AECB and PassivHaus standards for residential property.	<p>New buildings to LEED Gold standard estimated to be c. 10% additional on capital costs although operational cost savings should more than compensate this premium over the lifetime of the building.</p> <p>The difference between a BREEAM ‘pass’ and an ‘excellent’ rating for offices is shown to incur an increase in capital cost of 0.8%.</p> <p>Building costs of Passivhaus for residential properties is approximately 7% higher.</p> <p>There is an uplift in costs for increased energy performance and performance will be maximised subject to viability.</p>	<p>The average CO₂ saving for a BREEAM assessed building is 22% and a BREEAM Excellent rated building is expected to reduce carbon emissions by 33%.</p> <p>1,360 kgCO₂/year saving for an average Passivhaus residential property. This equates to 68 tCO₂e over the lifetime of a property (c.50 years).</p>	Property team	<p>This needs important consideration given the potential to decommission larger office spaces and move to smaller ones. The council has a good record for pushing for higher EPC ratings but they are encouraged to take this further with these green industry standards.</p> <p>This applies to both properties the council will operate and those which they plan to let out.</p> <ul style="list-style-type: none"> Map out projected growth of property portfolio and estimate the impact on the carbon footprint. If limited data, the same method used in the footprint calculation can be applied. To assess the improvement from current EPC rating, site audits should be carried out to provide an accurate estimate. Develop a policy that all new properties will be BREEAM/LEED or similar industry standard. Identify sources of finance of programme funding. Liaise with LEED/BREEAM and the carbon neutral team to agree a strategy for implementation. <p>Timeframe: update of policy <1 year</p>

04 – ACTION PLANNING

PROPERTY– WIDER CONTEXT AND DELIVERY

Priority 4: New Properties

Examples of Best Practice

In a move towards more sustainable and zero carbon buildings the [Welsh Government \(WG\) Planning Policy](#) now requires projects with a floor area greater than 1000m² to achieve a BREEAM Very Good rating. In addition, WG require an Excellent rating to be achieved for projects where they provide core funding.

[Exeter Passivhaus Leisure Centre](#) - As part of Exeter City Council's city centre master plan, this is set to be a world first Passivhaus leisure centre. It is the first commercial Passivhaus development from the council who have delivered several domestic schemes. The design includes 70% saving on energy costs when compared to a current good practice pool and a 50% reduction in water use. Local news report suggest the cost of the leisure centre in £44 million.

[Brent London Borough Council](#) BREEAM Outstanding civic centre - the multi-use building achieved a 92% BREEAM score and was rated outstanding for its low impact design. At the time it was the UK's greenest public building.

Monitoring Indicators

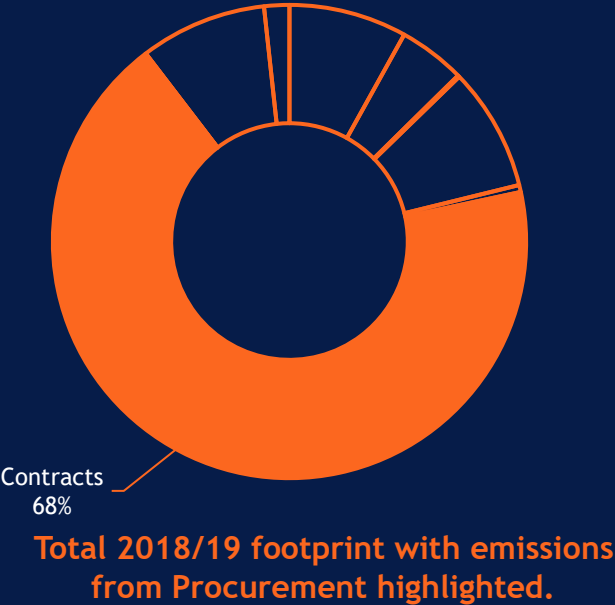
- Display Energy Certificate (DEC) of new build and efficiency rating
- Certification e.g. BREEAM outstanding

Co-benefits

- [Lower operational costs](#)- Energy efficiency and water saving technology has a forecast payback is typically less than 5 years for energy and less than 2 years for water.
- Benefits to those who work within these offices through factors such as better air quality and lighting.
- Leading by example and demonstrate to other stakeholders in the district that this level of ambition is feasible and share insights on the savings and benefits.



04 – ACTION
PLANNING
E) PROCUREMENT &
CONTRACTS



68% of total footprint

83% of Scope 3 emissions

The emissions from procurement and contracts were estimated as 12,466 tCO₂e which represent over two-thirds of the councils total footprint. As the largest emissions category in the 2018/19 footprint, HDC should also look to reduce emissions from its supply chain by working with suppliers to minimise their footprint. These emissions sit within Scope 3 of the council's footprint. This means it is not within direct control of the council, however it is deemed to be within stronger influence by updating the procurement process to award suppliers who are taking action to reduce emissions.

*Please note there were errors identified by the officers leading procurement services at the council in the annual contract values. The council will re-calculate emissions from this sector and values may change, however the actions discussed overleaf are still applicable.



04 – ACTION PLANNING

PROCUREMENT – ACTION PLAN- ENABLING ACTIONS

Priority 1: Sustainable Procurement

Drive carbon reductions from contractors and suppliers through implementing sustainable procurement policies and processes

Enabling Actions	Description	Estimated Cost	Stakeholders	Implementation
Effective contract management	Encourage more effective contract management and monitor contracts commitments to hold suppliers to account. This is essential in ensuring commitments made on sustainability criteria are delivered.	Within existing staff resources.	Contract managers	Consensus from stakeholder working groups was that this would not be a significant administrative burden. <ul style="list-style-type: none"> Review current process and consult staff on barriers to effective contract management. Develop a plan to improve contract management and address the barriers. Continue to deliver and review training provided to contract managers. Timeframe: <1 year
Better supplier data and reporting	Collection of more detailed data on suppliers and requirement for suppliers to report their carbon footprint back to the council. This is necessary to monitor if progress is made. Methods currently rely on a carbon footprint per £ spent which will not reflect reductions.	Cost mainly to supplier. Cost to HDC accounted for in job role of annual footprint analysis.	Carbon reduction team and Suppliers.	It was agreed that this would be helpful in constructing the annual council footprint and help to monitor progress. <ul style="list-style-type: none"> Develop a template for data provision and guidance on data collection. Set a date and process for annual reporting from suppliers - could be an annual figure based on financial year reporting. This may be included as part of a sustainable procurement policy. For existing suppliers, this could be done voluntarily or through agreed legal changes to the contract. Timeframe: <1 year
Increased weighting of social value	Consider increasing the weighting of social value in criteria to ensure that sustainability has a greater influence in evaluation.	Within existing staff resources.	Shared Procurement Services	The general consensus amongst officer was that this would be easy to implement and a good opportunity to prompt suppliers to reduce carbon. However, it was acknowledged that this could increase cost. <ul style="list-style-type: none"> Review current social value weighting and implications of increasing to 10 - 30%. Potential to assess this on a case by case basis. Timeframe: <1 year

04 – ACTION PLANNING

PROCUREMENT – ACTION PLAN- CARBON REDUCTION

Priority 1: Sustainable Procurement

Actions	Description	Estimated Cost	Carbon saving	Stakeholders	Implementation
Sustainable procurement policy	Introduce a sustainable procurement policy or charter	Within existing staff resources.	3,340 tCO ₂ e per year	Shared Procurement Services and Contract Managers	<p>Crawley Borough Council already have a Social Value Charter which includes a number of sustainable procurement and environmental requirements - we advise exploring collaboration where possible, particularly as HDC's contracts are managed as part of a shared procurement service. The policy can be applied across all HDC's contracts, although in practice it may be targeted at larger suppliers first. Additional support may be needed for smaller suppliers.</p> <ul style="list-style-type: none"> • Review best practice for a sustainable procurement policy. • Write to current suppliers and ask them to voluntarily sign up to the principles. • Ensure all new contracts include ambitious sustainability commitments. <p>Timeframe <1 year</p>
Supplier requirements	Require suppliers to set SBTs/have a climate strategy or target	<p>No direct cost to council, cost on supplier for Environment strategy or SBT process. SBTi target validation: The target validation service costs USD 4,950, which includes up to two target assessments.</p> <p>Other target methods may also be available, for example, see the City of Manchester approach.</p>	524 tCO ₂ e reduction from base year every year. This would increase yearly e.g. after 5 years the saving would be 2,618 tCO ₂ e.	Shared Procurement Services, Contract Managers and Suppliers	<p>From officer discussions, asking to suppliers to set the own targets in line with the council was seen as another good opportunity for encouraging reductions. This was deemed particularly relevant for bigger suppliers.</p> <ul style="list-style-type: none"> • Assess type of commitments the council would like to see from suppliers e.g. in line with the district wide target. • Liaise and support suppliers to set their own targets. <p>Timeframe: 3 years</p>

04 – ACTION PLANNING

PROCUREMENT – WIDER CONTEXT AND DELIVERY

Priority 1: Drive carbon reductions from contractors and suppliers through implementing sustainable procurement policies and processes

Examples of Best Practice

Cornwall Council developed a Responsible Procurement Policy which includes its commitment to environmental sustainability. They also have a Supply Chain Development Programme in order to inform suppliers about the tender process and are improving communication between the council and the market.

Lambeth Council have introduced mandatory carbon reporting as part of their procurement process and have written to engage all current suppliers with the net zero challenge. They have issued a responsible procurement guidance and will be monitoring its impact. Their approach gives a 30% weighting to social value which includes carbon reduction measures.

Crawley Borough Council have introduced a Social Value Charter. Suppliers are asked to commit to the SVC either on a voluntary or mandatory basis depending on the value of the contract as part of the procurement process. The charter includes commitments to apply environmentally friendly and sustainable business practices.

City of Manchester have used the borough wide target as a short-hand way of indicating the scale of change needed for a variety of suppliers / businesses and organisations within the city. Some have subsequently sought a SBTi certified target after.

Monitoring Indicators

- Number of suppliers reporting emissions and completeness of footprint.
- Number of suppliers with carbon reduction target and plans in place.
- Existing assessment methods in place for contract management and review.
- Annual reporting of social value assessments and weighting.

Co-benefits

- Better contract management could also lead to cost savings and enforcement of other social value commitments. This can also help to build relationship with suppliers
- Working with suppliers to reduce their own carbon emissions and those in the supply chain may also contribute to the reduction in emissions of the wider district.
- Increase resilience by encouraging suppliers to make changes now can help to protect them as the market changes and the economy shift to low carbon.

Key legislation

- Social Value Act 2012 - social value required in all relevant procurements

The government website has a series of Sustainable procurement tools to define what this means in public procurement and provide guidance on good practice. For example:

- **Government Buying Standards** - This sets out mandatory and best practice product specifications for public sector procurement.
- **Sustainable procurement training**- The National Sustainable Public Procurement Programme provides training on sustainable procurement

04 – ACTION PLANNING

F) PARKS & COUNTRYSIDE



The role of Parks & Countryside

In Chapter 2, we provided background around the potential role of HDC's Parks & Countryside as a means through which to address residual emissions. In this Action Plan, we further explore opportunities in this area.

HDC Parks & Countryside Profile

HDC owns and manages approximately 400 hectares of green space. There are 3 major parks in the district; Horsham Park, Southwater Country Park, and Warnham Local Nature Reserve. In addition, HDC manages 6 open spaces, along with cemeteries, allotments and sports facilities. Management of the parks is underpinned by HDC's [Green Space Strategy](#), of which a key goal is the protection of green space for its role in climate change mitigation. Chessworth Farm is also a valuable area of land, with significant biodiversity, that the council manages.

Horsham District's sequestration potential

Reviewing net emission associated with Land Use, Land Use Change, and Forestry (LULUCF), we can assess the contribution of green space and the human impact on it, in the context of the accumulation, or release, of carbon stocks.

We have reviewed [BEIS local authority based territorial CO₂ emissions data](#) for the entirety of Horsham District. LULUCF (comprising forest, cropland, grassland, wetlands, settlements, and harvested wood) net emissions comprised -71.4 kT CO₂. Total emissions for the district, including impacts outside LULUCF, were 649.1kT CO₂. This shows that the sequestration potential of land use in HDC has a substantial (>10%) impact on the broader emissions profile, indicating that land use should be a major consideration in any carbon mitigation strategy in the district.

04 – ACTION PLANNING

PARKS & COUNTRYSIDE– ACTION PLAN

Priority 1: Sequestration Mapping
 Carry out mapping to identify existing natural capital stock, opportunities to enhance it and offsetting requirements.

Enabling Actions	Description	Estimated Cost	Stakeholders	Implementation
Assessment of carbon sequestration of current land and identify opportunities to increase sequestration	<p>Review existing data on land-use in the district to identify opportunities for carbon sequestration through nature-based climate solutions.</p> <p>Sequestration opportunities could take the form of tree and hedgerow planting, or restoration of ecosystems including wetlands, peatland, grasslands, pasture, and soils.</p> <p>Mapping of the district as a whole would also be beneficial for a wider offsetting strategy.</p>	<p>Consultant support in the delivery of the assessment is estimated to cost in the region of £5,000.</p> <p>Additional staff resource - 0.5 FTE.</p>	Parks & Countryside team	<p>HDC's Parks and Countryside strategy does not currently integrate carbon, so this offers a significant opportunity to bring this element to decision-making. At present there is no in-house resource to undertake an assessment of this type- training or outsourcing would be required. Stakeholders have highlighted the potential for sequestration in marginal land such as industrial sites.</p> <p>Decision makers should consider take a holistic view of the local ecosystem, and be aware that alternatives to tree planting may be better suited to some areas.</p> <ul style="list-style-type: none"> • Explore methods and the associated limitations of approaches to assigning a carbon value to natural capital. • Training of staff member in carbon assessment for land types. • Ensure mapping includes existing stock but also opportunities for enhancing stock. <p>Timeframe: <1 year</p>

04 – ACTION PLANNING

PARKS & COUNTRYSIDE– ACTION PLAN

Priority 2: Protect and Enhance

Deliver the protection and enhancement opportunities identified in the mapping exercise.

Enabling Actions	Description	Estimated Cost	Stakeholders	Implementation
Develop an offsetting strategy	Define the principles and priorities the council wishes to follow when approaching offsetting to achieve carbon neutrality e.g. certified status, out-of-boundary initiatives and insetting potential.	In house strategy development or external consultants (£10,000)	Carbon Reduction Team, Senior Leadership and Parks & Countryside team	<p>It was agreed with key stakeholders that offsetting should be the last resort for reducing emissions. However, given the council has carbon neutral ambitions, some degree of offsetting will be required, but this should be minimised as much as possible.</p> <ul style="list-style-type: none"> • Firstly offsetting within boundary and on existing council land should be reviewed and enhanced where possible. • The next option is for the council to ether acquire land or support other land holders in the district to maximise sequestration. • Other remaining residual emissions could apply the authority-based insetting mechanism and the council could fund local energy projects. • The final area to review is the council's approach to out-of-boundary certified schemes ensuring that HDC can demonstrate additionality, permanence and verification. <p>Timeframe: <2 years</p>
Impose more ambitious carbon requirements on land being considered for development	Explore potential opportunities through the planning system and local plan for either 1) acquiring land or 2) requiring developers to better manage land that is subject or adjacent to development.	Within existing staff resources	Parks & Countryside team, working in partnership with Property and Planning teams	<p>All land acquisition plans will need to balance the need for housing, and competing funding requirements. This could in part be addressed by highlighting co-benefits associated with green space and the local population. The Environment Bill 2020 stipulates new requirements of a biodiversity net gain of at least 10% for new developments.</p> <ul style="list-style-type: none"> • Include in local plan review alongside Wilder Horsham District. <p>Timeframe: 1 year</p>

04 – ACTION PLANNING

PARKS & COUNTRYSIDE– ACTION PLAN

Priority 2: Protect and Enhance

Enabling Actions	Description	Estimated Cost	Stakeholders	Implementation
Integration of low-carbon agenda with Wilder Horsham District	Wilder Horsham District is a five-year partnership between Sussex Wildlife Trust and HDC that aims to help wildlife thrive. The primary aim is not related to carbon but there is overlap in protecting natural capital and engagement with land owners.	Within existing staff resources.	Sussex wildlife trust and Parks and Countryside team	<p>Reliant on partnership with external stakeholders. The initiative is focussed on land outside of HDC ownership, but does offer an opportunity to engage district residents and land owners.</p> <ul style="list-style-type: none"> • Pool knowledge and activities that are thought to have carbon impacts and seek to quantify impacts, explore opportunities to accelerate or expand. • Set out a clear climate mitigation (and adaptation) strategy in partnership with Wilder Horsham District. • Build on existing framework to engage with other landholders including farmers and communities to maximise the potential for tree planting and soil management. <p>Timeframe: 1 year</p>
Explore opportunities to transfer ownership to wildlife trust	By transferring ownership it may increase the capacity of staff to develop nature based solutions	Transaction costs TBD Offset by potential savings from reduced maintenance and staff time demanded.	Sussex wildlife trust and Parks and Countryside team	<p>This would need to form part of a more robust natural capital strategy.</p> <ul style="list-style-type: none"> • Review long term goals and ownership of Wilder Horsham District and incorporate the carbon sequestration objectives into long term plans. <p>Timeframe: <5 years</p>

04 – ACTION PLANNING

PARKS & COUNTRYSIDE– ACTION PLAN

Priority 2: Protect and Enhance

Actions	Description	Estimated Cost	Carbon saving	Stakeholders	Implementation
Protect current natural capital stock	A key part of natural capital action is protecting the current stock from degradation.	Within existing resources.	TBD by mapping exercise (covered under Priority 1)	Park & Countryside team	HDC's existing plan for tree stock management has a 5 year plan and associated funding secured. <ul style="list-style-type: none"> Following on from mapping exercise, assess the potential risks to stock e.g. pests, development Produce a natural capital management strategy alongside Wilder Horsham District plans and budget. Incorporate into wider policies e.g. planning. Timeframe: 1 year
Heathland restoration	Continuing to restore and protect heathland in the region which is an important carbon sink.	Estimates on present value per ha <£10,000 over 50 years.	Dependent on management and restoration option and the data on this habitat shows huge variations	Park & Countryside team	Heathland in HDC's ownership eligible for restoration is limited to around 60 acres, of which 35 acres has been subject to a restoration programme. A second stage for the remaining land is subject to funding. <ul style="list-style-type: none"> Seek funding for continuing restoration. Calculate carbon saving from restoration to date to support a business case. Timeframe: <2 years
Increase natural capital stock	Increase tree and hedgerow planting and green infrastructure on existing land or acquired land to offset residual emissions. Please note the estimates do not take into account existing stock	£205,000 (based on £41 for 30 trees). 0.5 FTE	Planting 148,000 trees or planting on 92.5 ha of land would save approximately 355 tCO ₂ (approximate offsetting requirement)	Park & Countryside team	As raised by stakeholders, it is important that tree planting does not harm diversity and disrupt wildlife so this must be fully evaluated. This is only appropriate for land which is currently urban or has minimal carbon sequestration. <ul style="list-style-type: none"> Following opportunities mapping and any land acquisition activities, set targets for enhancement and develop a planting strategy that considers potential impacts. Timeframe: 5 years.

04 – ACTION PLANNING

PARKS & COUNTRYSIDE– WIDER CONTEXT AND DELIVERY

Priorities 1 and 2: Sequestration Mapping; Protecting and Enhancing

Examples of Best Practice

Greater Manchester City of Trees is a leading example of how a tree planting project can address climate change objectives whilst engaging the local community and providing numerous co-benefits. So far, the initiative has planted 459,929 trees and involved 12,538 people. It is aiming to plant 3 million trees and bring 2,000 hectares of unmanaged woodland back into community use.

Greater Manchester Natural Capital Investment Plan aims to mobilise funding into natural capital projects in the region. The plan has three key components:

1. A pipeline of potential project types which need investment;
2. Finance models to facilitate private sector investment and the role of public sector
3. Recommendations to put the plan into practice over the next 5 years.

Newcastle City Council's Green Infrastructure Delivery Framework highlights the co-benefits of green and blue infrastructure, particularly building on strategies to reduce flood risk. They have a local steering group as well as a monitoring and delivery plan.

Monitoring Indicators

- Tree/ green space cover
- Tree surveys
- Completeness of mapping and granularity of data
- Offsetting strategy in place
- Plant diversity metrics

Co-benefits

- Tree planting has benefits for biodiversity, the environment (e.g. flood mitigation, heat regulation), individuals (e.g. spiritual connection to nature), society (e.g. recreation) and the economy (e.g. increased productivity resulting from the aforementioned factors).
- Any landowner/ manager can potentially be involved, creating a diverse group of stakeholders including schools, farmers, corporate organisations and private landowners/ individuals

Key legislation

- Land use: Policies for a Net Zero UK (2020) - CCC report sets out the policies and actions required to deliver the land sector's contribution to the UK net zero target.
- A Green Future: Our 25 Year Plan to Improve the Environment - sets out the government's plans for the natural environment including embedding an environmental net gain principle into development.
- The Environment Bill 2020 stipulates new requirements of a biodiversity net gain of at least 10% for new developments.

04 – ACTION PLANNING

G) SUMMARY

In this summary, the estimated impact of the opportunities in the preceding Action Plan are considered together with factors outside of direct council-led action to illustrate how Horsham District Council can achieve its emissions reduction goals.

Savings are identified as:

- **Council led actions-** as set out in the action plan provided
- **Grid decarbonisation-** nationally led decarbonisation of the electricity grid- as set out in your “Business as Usual” scenario
- **Authority based Insetting-** Residual emissions can be targeted through authority based insetting and nature based solutions.

Please note this represents a snapshot of the footprint in 2030 and 2050 and so does not represent cumulative emissions totals or reflect a carbon budget. The council must agree the timeline for action to work out yearly savings. This assumes that all actions have been completed by 2030.

04 – ACTION PLANNING

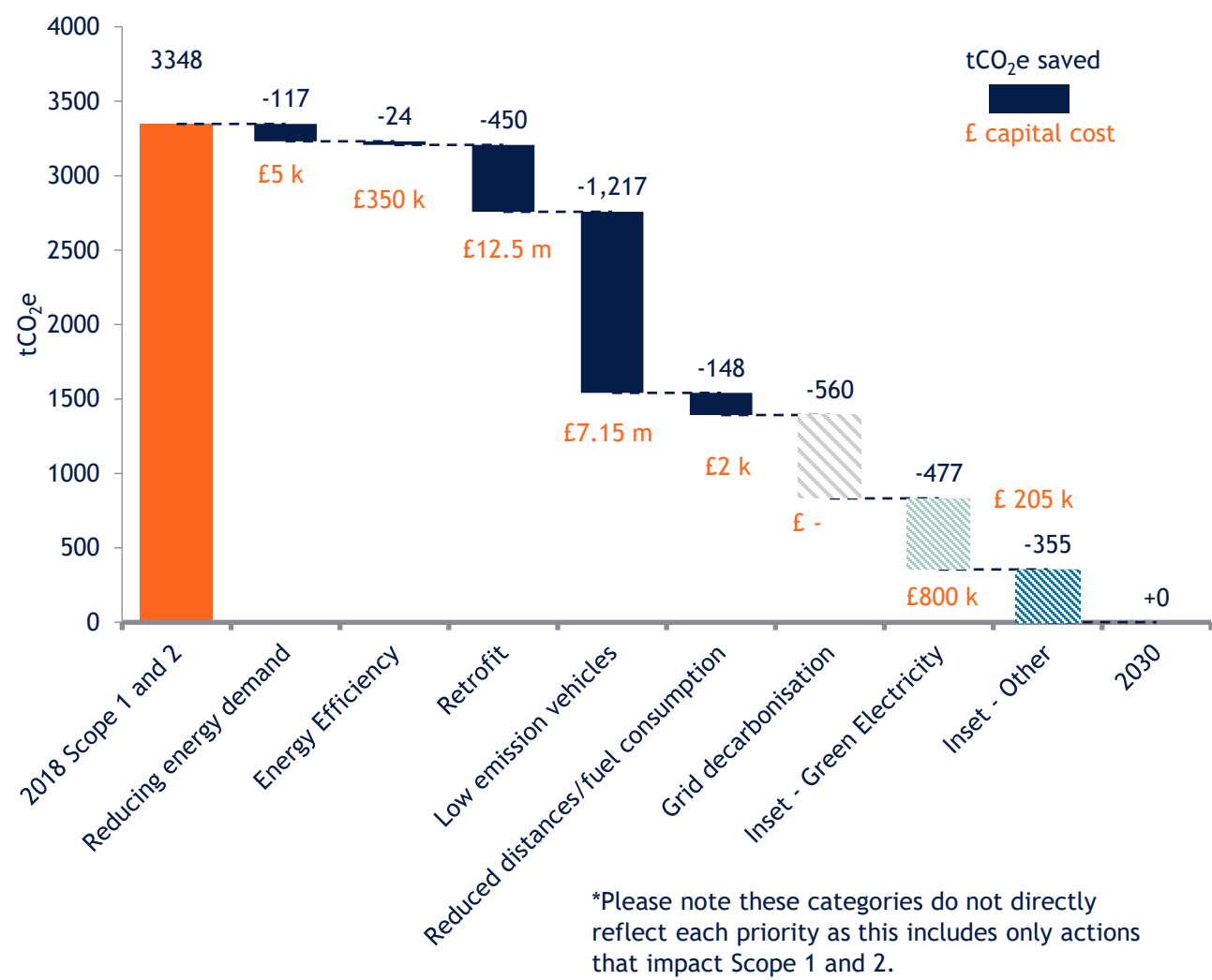
SUMMARY– CARBON BENEFITS AND COSTS

The table summarises the annual reductions in carbon emissions and the cost associated with each priority action (not including enabling actions). The carbon savings have been presented for the 2030 target date. Where a quantitative estimate of a cost was not available, a qualitative description has been provided.

Sector	Action Group	Annual tCO ₂ Saving	Capital Costs	Operational/ Revenue Costs	Time & Resource (FTE)	Savings/Payback	Notes
Transport	Priority 1	310	£2,000	£2,000	2-3 months	Reduced fuel costs	Includes some installation of bike facilities.
	Priority 2	1,217	£7,150,000	Electricity cost, repairs	0	£5,315,000 (lifetime fuel savings and tax)	Carbon savings based on switching RCVs and cars/vans to electric. Cost - based on additional costs and savings for electric vehicles (over diesel/petrol). Does not include renewable electricity generation.
	<i>Sub Total</i>	1,527	£7,152,000	£2,000	2-3 months		
Property	Priority 1	137	£0	£5,000	0.5 FTE	Reduced energy bills	Based on carbon literacy training.
	Priority 2	612	£24,950,000	Energy bills, maintenance	1 FTE	Reduced energy bills	Based on residential retrofit to energiesprong standard. Non-domestic saving takes the lower estimate and costs are based on HDC scaling of a previous audit.
	Priority 3	1,063	£800,000	Energy bills, maintenance	0	Revenue generation	Based on 1MW heat pump but other options are available. This is not based on an assessment of required capacity.
	Priority 4	N/A		N/A	N/A	N/A	Not included in savings as it is based on limiting increases in emissions
	<i>Sub Total</i>	1,812	£25,750,000	£5,000	1.5 FTE		
Parks & Countryside	Priority 1 & 2	355	£205,000	Maintenance	1 FTE		Based on tree planting to offset residual emissions, does not consider existing stock.
Procurement	Priority 1	5381	£0	£0	0		Sustainable Procurement Policy is assumed to incorporate carbon reduction targets already being addressed through an SBT.
Total		9,075	£33,107,000	£7,000	2.5 FTE		

04 – ACTION PLANNING

SCOPE 1 & 2 – SUMMARY OF MEASURES



This chart represents an aggregation of the various council-led carbon savings relevant to Scope 1&2, from the above Action Plan and the Business as Usual Scenario, to provide an indication of the extent to which applying each action would bring HDC closer to Net Zero. Please review the assumptions in Appendix 7.

Key Observations

- Council led actions have the potential to reduce HDC emissions by 58% (1,956 tCO₂e)
- Actions associated with low emissions vehicles had decisively the biggest impact potential (primarily due to the impact of low carbon LGVs)
- Outside of council-led action, nationally led decarbonisation of the electricity grid will reduce HDC emissions by 17% (560tCO₂e)
- After applying the carbon reduction actions, residual emissions amounted to a remaining 832 tCO₂e. These are targeted through authority based insetting.

Grid decarbonisation

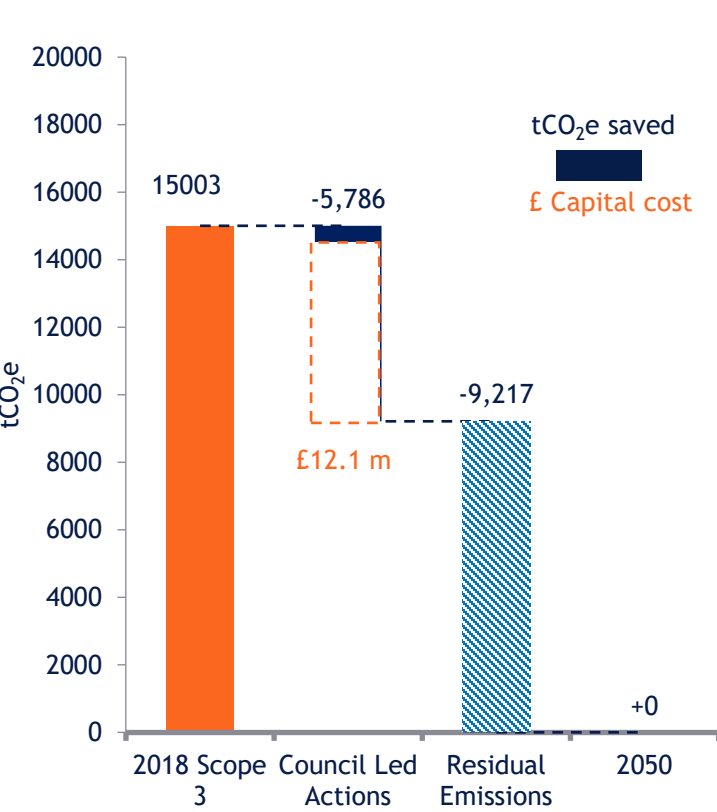
Emissions achieved through grid decarbonisation

Residual emissions

- The remaining emissions from electricity consumption from HDC property reduced through procuring green zero-emissions electricity. The remaining emissions from fleet are also reduced by ensuring the electricity supplying EVs is from 100% renewable sources.
- Offsetting or insetting based activities - this would equate to planting of 148,000 trees by 2030 (based on 14,800 trees per year until 2030) or 92.5 hectares of tree planting¹ or could involve energy projects in the district.

04 – ACTION PLANNING

SCOPE 3– SUMMARY OF MEASURES



This chart illustrates the impact of the proposed council led actions to address Scope 3 emissions. Council led reductions are aggregated, and include procurement (which constitutes 93% of the reduction), leased buildings, commuting and business travel.

Key Observations

If fully implemented, council led actions lead to a reduction of 5,786 tCO₂e, with residual emissions remaining after council led action equalling 9,217 tCO₂e.

Procurement

Based on all suppliers setting and achieving a SBT over 10 years. This does not include savings from a Sustainable Procurement Policy in order to avoid double counting. It is assumed the policy would advocate for the inclusion of carbon reduction targets already being addressed through an SBT. This is separately covered because it requires significant and challenging reductions from suppliers to achieve their SBT.

Residual emissions

Offsetting/Insetting - Note it was not possible to estimate the potential of renewable energy supply for leased building as there is no breakdown of energy or emissions sources. The remaining emissions could be addressed using other insetting activities.

This further illustrates the need for offsetting or Authority Based Insetting. A target of Net Zero Scope 3 emissions by 2050 brings you in line to benefit from wider reductions in the district in line with the UK’s target to bring all emissions to Net Zero by 2050. To promote further emissions reductions, the council needs to further engage key suppliers and work to address key emission sources in the wider district, such as through:

- Renewable energy supply
- Reduced travel
- Building retrofit

05 Appendices

APPENDICES

Appendix	Page Number
Appendix 1 - Definitions	113
Appendix 2 - SBTi Method	114
Appendix 3 - Tyndall Carbon Budget	115
Appendix 4 - Action Planning - Prioritisation	116
Appendix 5 - Action Planning- Assumptions & Methodologies	117-126
Appendix 6 - Stakeholder Consultation Summaries	127-131
Appendix 7 - Summary of Measures- Assumptions	132

APPENDIX 1 - DEFINITIONS

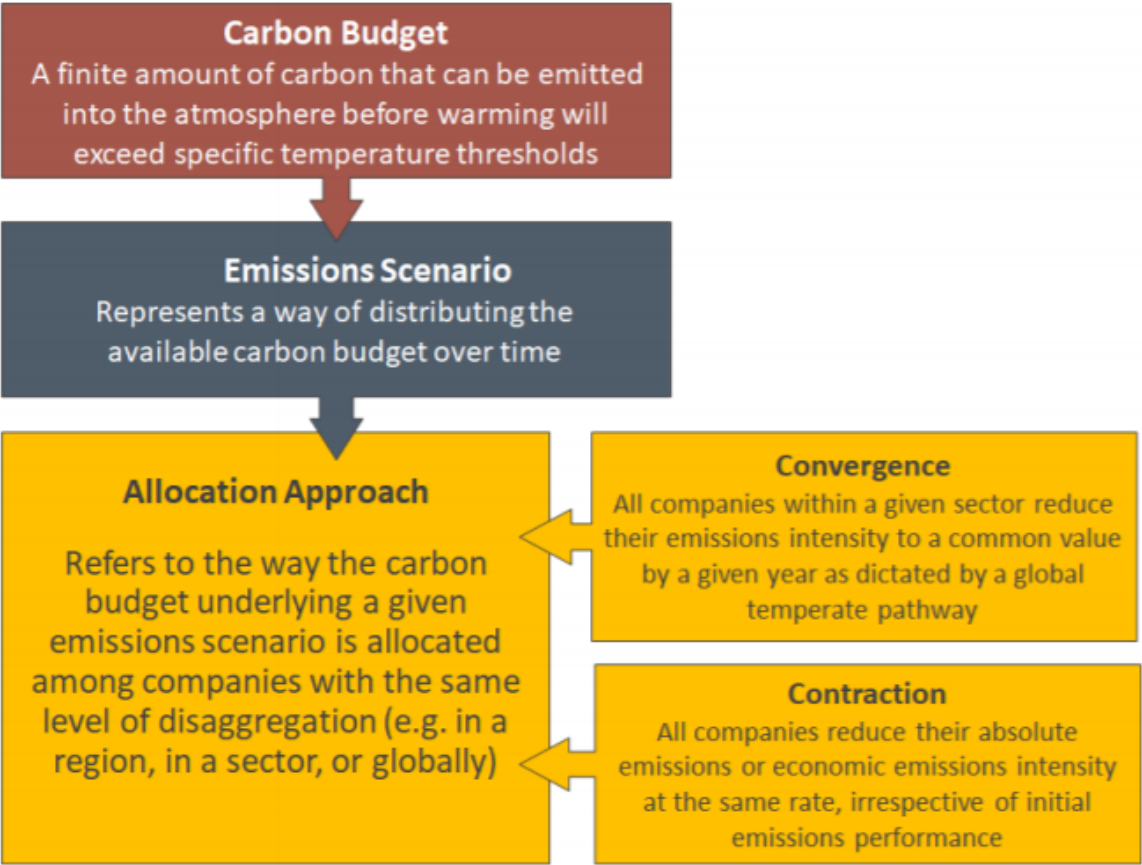
- **Carbon Budget:** The allowed cumulative total of emissions over a period of years which ensures temperature change remains below dangerous levels. Defined by [The Tyndall Centre for Climate Change Research](#).
- **Co-benefit:** The positive effects that a policy or measure aimed at one objective might have on other objectives.
- **Ecosystem services:** These refer to the benefits that ‘flow’ from natural capital (such as fertility from soils, or fuel and fibre from forests).
- **GHG:** Greenhouse Gases.
- **Green Infrastructure:** This refers to the network of multi-functional green (and blue) space and other features, both urban and rural, which can deliver quality of life and environmental benefits for communities. It includes everything from nature reserves, woodlands and hedgerows to farmland, roadside verges, and green roofs.
- **Insetting:** A similar principle to offsetting, however the carbon saving occurs within an organisation’s supply chain or local authority region.
- **Nature-based solutions:** These employ natural phenomena to help address problems such as climate change mitigation and adaptation. In terms of climate mitigation (as is the subject of this report), they focus on carbon sequestration. Examples include tree and hedgerow planting and restoration of ecosystems including wetlands, peatland, grasslands, pasture, and soils. Nature-based solutions are championed in the UK Government’s draft Environment Bill.
- **Natural Capital:** This refers to the ‘stocks’ of renewable and non-renewable natural resources available to society. It refers to nature in the context of the five capitals model in economics (i.e. financial, manufactured, social, human and natural capital). It is associated with monetary or other valuation and accounting techniques. Examples include soil, water, and forests.
- **Residual emissions:** The estimated emissions remaining or left-over after reductions have been applied.
- **SCATTER:** Setting City Area Targets and Trajectories for Emissions Reduction. This is the tool used in the report to look at district-wide emissions and future emission pathways.
- **Sequestration:** The uptake of carbon-containing substances, in particular carbon dioxide from the atmosphere.

APPENDIX 2 – SBTI METHOD

The approach taken to allocate emissions pathways by the SBTi consists of three main elements: a greenhouse gas budget, emissions scenarios and a way of allocating the budget.

- **Emissions scenarios** - The first stage of the process involves determining a set of potential emissions scenarios that are “plausible, responsible, objective, and consistent and that are aligned with a specific temperature goals (1.5°C or well below 2°C of global warming)”. The scenarios are taken from the Integrated Assessment Modelling Consortium and the International Energy Agency. They are taken from over 400 peer-reviewed emissions pathways from the IPCC Special Report on 1.5°C of warming.
- **GHG budget** - The budget is secondary to the emissions scenarios, which provide additional information such as reduction rates over time.
- **Allocation approach** - This is then used to translate the emission scenario and GHG budget into requirements which allow organisations to align their emissions with the pathway. This can either take a convergence or contraction approach. The convergence method is applied to companies within a sector to reduce to an emissions intensity that is the same across the sector.

Methodology taken from the [Foundations of science based target setting](#)



APPENDIX 3: DERIVING THE CARBON BUDGET

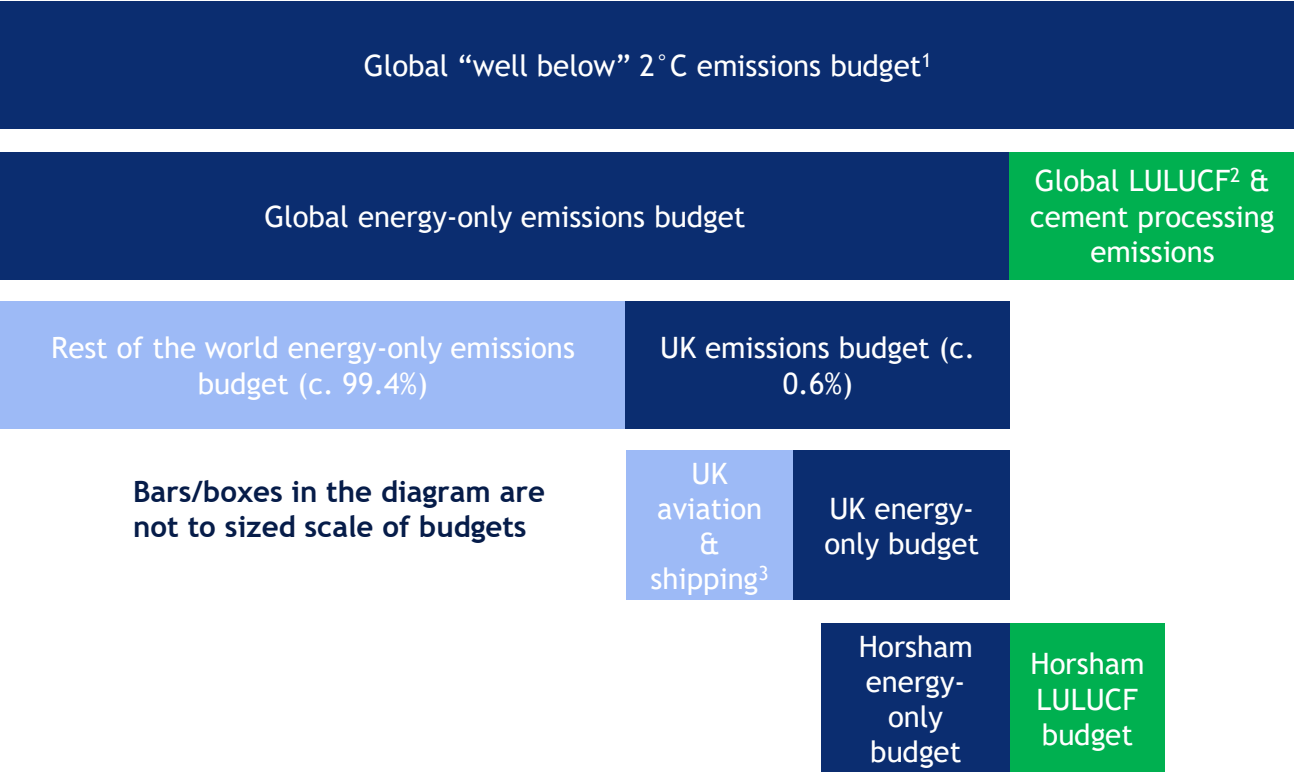
Horsham’s Budget

The carbon budget (4.5 million tCO₂ for the period 2020-2100) sets out a finite emissions limit that the should not be exceeded in order that Lewes remains in line with the Paris Agreement. The budget itself is derived from a ‘scaling-down’ approach - a full methodology is [available to view](#) in the full print version of the Tyndall Centre’s research. The Tyndall Centre for Climate Change Research have based this budget on a 2°C global average temperature rise, on the basis that:

- 1. The Paris Agreement commits us to limiting warming to this level.
- 2. Global modelling for both 1.5°C and 2°C assume planetary scale negative emissions.

Negative Emissions Technologies (NETs)

NETs remain a highly speculative and uncertain development and are leaned upon heavily in IPCC models. Large-scale NETs are not likely to be viable within the boundary of Horsham due to the profile of emissions. If research, development and demonstration of NETs shows that they may work at scale, and then they are rolled out globally at unprecedented rates, 1.5°C may theoretically be achievable. However this is only made possible if rapid, deep 2°C mitigation begins now and additional feedbacks do not occur.



1 - Budget derived from IPCC AR5 synthesis report and represents a 66-100% probability of global warming not exceeding 2°C (“well below”). Due to the inertia in our energy systems and the amount of carbon we have already emitted, the Paris 1.5°C commitment is now only likely to be viable if negative emissions technologies (NETs) prove to be successful at a global scale. If the 13.5% emissions reduction rates for Horsham are achieved and NETs are deployed at the scales assumed in the global models, then the targets adopted may be considered as a 1.5°C compatible. This also expressly assumes that other carbon cycle feedbacks, such as methane released due to melting permafrost etc., do not occur, and that an overshoot of 1.5°C does not result in increased feedbacks that further accelerate warming at lower budgets than the IPCC budgets currently estimate.

2 - Land Use, Land Use Change & Forestry

3 - UK Aviation & Shipping is accounted for at the national level. If emissions due to aviation and shipping increases, then a smaller proportion of the UK-wide budget is available for the energy-only budget and vice versa.

APPENDIX 4: PRIORITISATION- RESEARCH METHOD

There are numerous of potential carbon reduction actions available to your organisation. When building the Action Plan, we have applied our judgement at several stages to prioritise the opportunities most suitable for your organisation. We have considered:

How to structure the action plan, and which sectors to focus on:

The actions discussed in the report are grouped by “Sector”, covering Transportation & Fleet, Property, Contracts, and Parks & Countryside. Our footprint review confirmed that these sectors constitute the vast majority of HDC’s emissions, and these categories are in line with relevant subject matter leaders and associated organisational structures inside HDC. Initial conversations with these stakeholders formed the foundation for the research that followed, and it became apparent that structuring the report in this way would improve uptake within HDC.

	Sectors included in footprint
Scope 1	Transportation & Fleet; Property
Scope 2	Property
Scope 3	Procurement & Contracts; Property

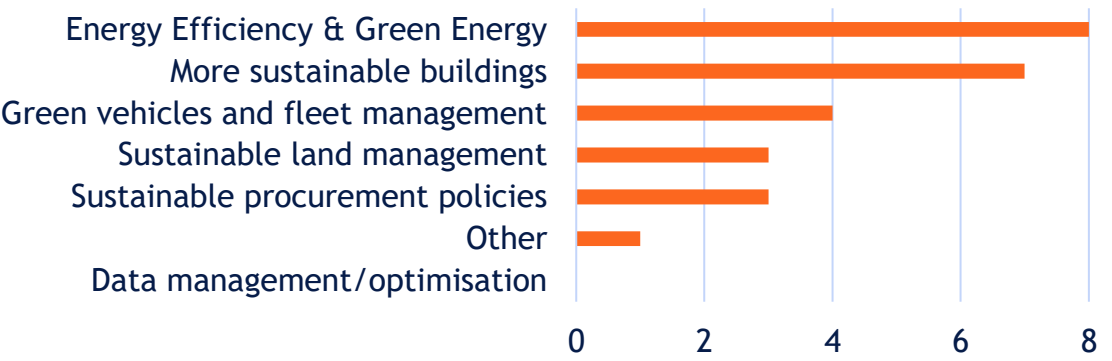
Which options are worthy of research and discussion in this report:

In producing the action plan, we have focussed our research on those actions expected to have the highest impact, and which will fit best with HDC’s existing assets and organisational structures. In building out our understanding of the latter, stakeholder engagement was essential. We have developed our understanding of key priorities, opportunities and barriers around each action within HDC:

1. Prior to the Stakeholder Workshop, we reviewed which actions to discuss based on our initial stakeholder conversations and HDC’s organisational priorities
2. We used the Stakeholder Workshop to gain consensus views on the ease of implementation and anticipated impact of each potential action using a qualitative ranking axis. We also polled attendees to test preferences across sectors.
3. After the session, we received further views the suitability of each option.

Collating these findings, we prioritised actions for inclusion in the action plan. A summary of key themes can be found at the beginning of each sector.

Which of the following action areas do you think offers the biggest opportunity for Horsham District Council to achieve “Net-Zero”?



APPENDIX 5

ACTION PLANNING ASSUMPTIONS & METHDOLOGIES

APPENDIX 5- ACTION PLANNING METHODOLOGIES

TRANSPORTATION & FLEET

Actions	Estimated Cost	Cost Calculation- Method & Assumptions	Carbon Saving	Carbon Saving Calculation- Method & Assumptions
Priority 1: Demand Reduction (1/2)				
Route Optimisation for Refuse Collection Vehicles (RCVs)	Dependent on chosen software/technology - offset by fuel savings	West Suffolk case study reports savings of £300,000 annually	95tCO ₂ e	Applies a similar general method to that used in Ashden by scaling the reductions achieved elsewhere. Based on West Suffolk council route optimisation which saved 115 tCO ₂ through mapping and geolocation technology. This example is from 2010/11 so some further advancements in technology may be available.
Eco-training for drivers	The Energy Saving Trust currently offer subsidised driver training programmes. Approximately £2,000.	Applies a similar general method to that used in Ashden by scaling the cost from other case studies where this approach has been implemented. Based on Oxford City Council a total investment of £5,000, the scheme had a simple payback of 4 weeks to train all 330 registered drivers at the council. There is no data available on the number of registered drivers at HDC therefore it has been scaled by the total number of staff. OXCC have approximately 1,300 staff.	53 tCO ₂ e	Applies a similar general method to that used in Ashden by scaling known reductions achieved elsewhere. Oxford City Council saved 150tCO ₂ e in the first year for driver training. They have approximately 1,300 staff therefore the savings have been scaled to the number of Horsham staff
Working from Home assessment	Additional staff resource for 2-3 month project	This would require additional staff time to conduct a survey, process data and analyse commuting habits.	126 tCO ₂ e (not including additional costs for home heating)	Assume commuting journeys are reduced by 40% (based on HDC own estimation of long term homeworking trends from email correspondence 03.07.2020)

APPENDIX 5- ACTION PLANNING METHODOLOGIES

TRANSPORTATION & FLEET

Actions	Estimated Cost	Cost Calculation- Method & Assumptions	Carbon Saving	Carbon Saving Calculation- Method & Assumptions
Priority 1: Demand Reduction (2/2)				
Greener commuting	No cost to council unless the invest in further schemes/facilities. E.g. Cycle Parking: Bike stands: £30-£40 Covered parking: £1,800 plus stands Lockers: £620+ per locker	Dependent on the need to provide facilities etc. example of cycle parking facilities from Transport for London Workplace Cycle Parking Guide	Increasing those who walk and cycle to 25% saves 21 tCO ₂ e	Based on altering the % of journeys by different modes- after the reduction in commuting journeys from work from home. Car journeys now reduced to 51%
Reducing overall business travel and encouraging active travel modes for necessary business travel	As above	As above	15 tCO ₂ e	Applying a similar percentage reduction based on home working of 40% and assuming 25% of Business travel will be by bike or walking instead of car.

APPENDIX 5- ACTION PLANNING METHODOLOGIES

TRANSPORTATION & FLEET

Actions	Estimated Cost	Cost Calculation- Method & Assumptions	Carbon Saving	Carbon Saving Calculation- Method & Assumptions
Priority 2: Alternative Fuels				
Increase Electric Vehicle (EV) charging infrastructure	50kW charging point: £17,000-£33,000. Note this does not include an estimate for savings or income received from renewable energy generation.	CNEX low emission van guide – 50 kW charging point can charge an electric van in <1 hour. No available estimates on number of charge points needed or current capacity at the council.	N/A- Enabling Action	N/A- Enabling Action
Trial low carbon Light Goods Vehicles (LGVs)	An electric RCV costs approximately £201,580 more than a diesel RCV (£5,845,820 for whole fleet). However, the lower running costs of an electric RCV mean that the total cost of ownership is £29,608 greater for an electric RCV (£858,632 for whole fleet)..	Based on the headline results of a cost-benefit analysis, comparing an electric RCV and a diesel RCV. Full method available in the report . Based on switching all 29 council RCVs.	1,110 tCO ₂ e	Based on an 87% reduction projected if all local authority RCVs were switched to electric (330 ktCO ₂ to 40 ktCO ₂ e). Based on switching all 29 RCVs to electric after route optimisation
Switch to EV cars/vans	One estimate suggests a cost of £150,000 per annum. However, other sources indicate a lower whole life costing for EVs e.g. Comparing an EV and Internal Combustion Engine (ICE) pool car over 5 years saves around £3,300 (total saving of £36,000 for whole fleet). Comparing an EV and ICE van over 3 years saves around £3,100 (total saving of £58,900 for whole fleet). The Energy Saving Trust offer a free Ultra-Low Emissions Vehicle review	Based on switching 30 cars, GM vehicles and vans. First estimate comes from Ashden which estimates an additional £5k per annum for each electric vehicle. The second estimate comes from the Energy Savings Trust's comparison of EV and ICE pool cars/vans.	107 tCO ₂ e (100% switch powered by grid) 164 tCO ₂ e (100% powered by renewable generation)	Ashden - average saving if all vehicles switched to EV is 66%, savings will increase as the grid decarbonises. If EVs are supplied by renewables generated on site then 100% of emissions from vehicles can be saved. Vehicles assumed to switch are Cars, Grounds maintenance vehicles and vans

APPENDIX 5- ACTION PLANNING METHODOLOGIES

PROPERTY

Actions	Estimated Cost	Cost Calculation- Method & Assumptions	Carbon Saving	Carbon Saving Calculation- Method & Assumptions
Priority 1: Behaviour Change				
Better report and feedback on energy consumption	Within existing staff resources.	Included as part of the role and communications associated with the annual footprint review.	N/A- Enabling Action	N/A- Enabling Action
Mandate consumption data from tenants	Within existing staff resources.	Incorporated into the additional staff resource required for providing guidance to tenants	N/A- Enabling Action	N/A- Enabling Action
Raise staff awareness	~£5,000 for education programme	Example staff education programme - carbon literacy training pricing index. £10 per applicant certification and £500-£750 for criteria checking if a new course were to be designed but toolkit for Local Authorities available.	117 tCO ₂ e	Based on savings made by Islington borough council. Scaled by the size of the boroughs population. Horsham is 59% of the size of Islington, which has been applied to savings achieved by Islington. Note that the Islington case study does include schools and is a more urban authority which we recognise may not apply to Horsham
Guidance for tenants	Additional staff resource - 0.5 FTE	Based on Ashden estimations for staff time required to drive non-owned property improvements.	20 tCO ₂ e	Ashden - 12% of energy is used in lighting and appliances. Ashden estimate 10% savings possible through improving energy efficiency of appliances.
Decommission buildings	Agency & transaction fees would be incurred as part of the sale. Cost savings will be achieved through avoidance of energy bills and business rate charges from new tenants.		137 tCO ₂ e (average office building)	Based on the average emissions of buildings that fall under the category 'offices'. However, the council may wish to decommission their highest emitting buildings. This does not factor in the replacement of buildings or an estimation of the emissions from home working.

APPENDIX 5- ACTION PLANNING METHODOLOGIES

PROPERTY

Actions	Estimated Cost	Cost Calculation- Method & Assumptions	Carbon Saving	Carbon Saving Calculation- Method & Assumptions
Priority 2: Energy Efficiency (1/2)				
Retrofit owned buildings	<p>Investment grade audits can be commissioned per building ranging £2,000-£5,000.</p> <p>Retrofitting to Energiesprong standard for residential properties - £4.9m</p> <p>Non-domestic buildings - £7.7m</p>	<p>Based on Anthesis' industry experiences.</p> <p>Residential: Ashden Energiesprong currently costs £75k per dwelling but is forecast to come down to £35k. Assuming all 65 residential properties are retrofit, some residential properties e.g. Drill Hall would be included under non-domestic as the main use of the building sits within that category.</p> <p>Non-domestic buildings: This is only indicative and all buildings would require investment grade audits because of their diverse, complex and unknown current efficiency status. Such audits may result in an estimate that is materially different.</p> <p>Method is based on HDC judgement informed by historic building audit carried out for Drill Hall which will be further refined during Investment Grade Audits. Properties with emissions greater than this building have been assumed to cost the same (£750,000). Those below have been scaled based on the proportion of emissions. We recognise emissions may not reflect the scale of retrofit required, cost is dependent on the size, complexity, age, operations, conditions of the existing building stock and its assets. It is recommended that HDC carry out audits across the entire stock.</p>	<p>Energiesprong standard for residential properties 145 tCO₂e</p> <p>Non-domestic building retrofit 332 tCO₂e (Ashden) to 1,983 tCO₂e (zero carbon buildings)</p> <p>Total: 497 - 2,128 tCO₂e.</p>	<p>Residential - We recognise that temporary accommodation may not have the same structure and size as domestic property but has been used due to similar use. Retrofitting to energisprong standard saves on average reduces emissions from homes by 86% (Ashden)</p> <p>Non-domestic not including car parks and lighting or residential (1,959 tCO₂) - 67% of energy is used for space heating and based on carbon trust estimates good controls can save 15-35% of heating costs. This approach takes the middle value of 25% savings. Dependent on the ambition of retrofit this is based on cutting the energy used for heating by 25%. (30.9 tCO₂ is SC3 and 297.9 tCO₂ is SC1&2; Ashden).</p> <p>An estimate of zero carbon property is included to show retrofitting to the highest standards (Towards Net Zero Carbon: Achieving greater carbon reductions on site. The role of carbon pricing.)</p> <p>These savings include retrofitting of Parkside however we recognise the leasing structure differs from other properties in Scope 1 and 2. Retrofit would reduce the footprint of HDC but the ownership of the cost would be have to be defined.</p>

APPENDIX 5- ACTION PLANNING METHODOLOGIES

PROPERTY

Actions	Estimated Cost	Cost Calculation- Method & Assumptions	Carbon Saving	Carbon Saving Calculation- Method & Assumptions
Priority 2: Energy Efficiency (2/2)				
Energy saving technologies	Minimal	Ashden - More energy efficient appliances do not necessarily cost more and any additional cost would be paid back through energy savings.	26 tCO ₂ e	Ashden - 12% of energy is used in lighting and appliances. Ashden estimate 10% savings possible through improving energy efficiency of appliances. But savings could be higher e.g. 50% for LCD screens and LEDs. Electricity consumption (not including car parks and public lighting - covered below) + gas consumption (23.4 is scope 1 and 2 but total includes scope 3)
Energy saving technologies	~£350,000 to replace 1,000 streetlights	Ashden - based on cost of £4m to Islington Council for the replacement of 11,350 street lights to LEDs with CMS (Central Management System) control but interest free Salix finance available for this with repayments funded through bill savings	120 kgCO ₂ e per 1000 streetlights	Ashden - based on Islington Council replacing 11,350 streetlights and saving 1,414 tCO ₂ per year. Scaled for 1000 street lights. There is no data available of the actual number of street lights or public lighting provided by the council in car parks etc, therefore estimates have been provided per 1000 lights replaced.
Retrofit properties let out when tenancies end	Investment grade audits can be commissioned per building ranging £2,000-£5,000. Dependent on the size, complexity, age, operations, conditions of the existing building stock and its assets. Estimate based on 1 HDC audit - £12.1 m	Based on Anthesis' industry experiences. Method and assumptions as above for retrofitting operational stock.	89 tCO ₂ e (Ashden estimate of insulation improvements) to 1,590 tCO ₂ e (zero carbon buildings)	Assuming 1/3 of properties are able to be upgraded over a 10 year period. Ashden - 67% of energy is used for space heating and based on carbon trust estimates good controls can save 15-35% of heating costs. This approach takes the middle value of 25% savings. These assumptions are illustrative only and should not be relied upon. Dependent on the ambition of retrofit this is based on cutting the energy used for heating by 20%.

APPENDIX 5- ACTION PLANNING METHODOLOGIES

PROPERTY

Actions	Estimated Cost	Cost Calculation- Method & Assumptions	Carbon Saving	Carbon Saving Calculation- Method & Assumptions
Priority 3: Behaviour Change				
Increase renewable energy supply	<p>Switching providers may require a fee. Additional staff time for energy opportunities mapping £800,000 for a 1MW heat pump</p> <p>Current supply does not offer a significant saving on non-renewable energy bills, whereas self generation would.</p>	Ashden - Based on a 1MW heat pump generating 4,380MWh. Heat pumps are cheaper than solar PV given RHI.	1063 tCO ₂ e	Based on the remaining electricity (not gas) demand in Scope 2 being supplied by quality renewable sources. Savings so far calculated as 640 tCO ₂ e. Some of these reductions may be covered by grid decarbonisation. 65% of emissions from energy use are from electricity so the saving is split proportionally with gas. Includes scope 3 savings.
Priority 4: New Property				
High green building standards for new properties	<p>New buildings to LEED Gold standard estimated to be c. 10% additional on capital costs although operational cost savings should more than compensate this premium over the lifetime of the building.</p> <p>The difference between a BREEAM 'pass' and an 'excellent' rating for offices is shown to incur an increase in capital cost of 0.8%.</p> <p>Building costs of Passivhaus for residential properties is approximately 7% higher.</p>	<p>Based on estimates provided by LEED and BREEAM specific papers. Passivhaus estimates from Ashden based on email correspondence. Note that these costs are likely to decrease overtime.</p> <p>No data available for projected council growth so results are given per property rather than attempting to estimating future property demand.</p>	<p>The average CO₂ saving for a BREEAM assessed building is 22% and a BREEAM Excellent rated building is expected to reduce carbon emissions by 33%.</p> <p>1360 kgCO₂/year saving for an average Passivhaus residential property. This equates to 68 tCO₂e over the lifetime of a property (c.50 years).</p>	Based on a cost and carbon saving study into BREEAM rated properties. For an average sized residential property, being built to Passivhaus standard would save approximately 1360 kgCO ₂ /year. (20 kg/m ² for 68m ² house).

APPENDIX 5- ACTION PLANNING METHODOLOGIES

PROCUREMENT

Actions	Estimated Cost	Cost Calculation- Method & Assumptions	Carbon Saving	Carbon Saving Calculation- Method & Assumptions
Sustainable Procurement				
Sustainable procurement policy	Additional staff time – 0.5 FTE (£45,000)	Ashden - Method assumes 2.5 days a week for an officer to update procurement policies, engage with suppliers and review tenders.	3,340 tCO ₂ e per year	Ashden - On average, every £1m of expenditure by local authorities in London resulted in 337 tonnes of GHG emissions, measured in carbon dioxide equivalent (CO ₂ e), ranging from 167 tCO ₂ e to 674 tCO ₂ e/£ mn. For average council, to achieve levels of the best would mean a saving of 170tCO₂e per £1m spend . Based on the data from the Carbon Trust report, which we acknowledge may not be fully accurate, the annual procurement spend is £20,235,071. Therefore savings would be approximately 3,340 tCO ₂ e
Supplier requirements	No direct cost to council, cost on supplier for Environment strategy or SBT process. SBTi target validation: The target validation service costs USD 4950 (+ applicable VAT), which includes up to two target assessments (companies can choose between one preliminary and one official, or two official validations). Other target methods may also be available, for example, see the City of Manchester approach.	SBTi website- FAQs on how much do companies have to pay - The target validation service costs USD 4950 (+ applicable VAT), which includes up to two target assessments (companies can choose between one preliminary and one official, or two official validations).	524 tCO ₂ e reduction from base year every year. After 5 years 2,618.	SBTi methodology - If all suppliers were to adopt a SBT in line with 1.5 C of warming, this means a 4.2% reduction in emissions from the base year per year over 5 years would be equal to 21% reduction

APPENDIX 5- ACTION PLANNING METHODOLOGIES

PARKS & COUNTRYSIDE

Actions	Estimated Cost	Cost Calculation- Method & Assumptions	Carbon Saving	Carbon Saving Calculation- Method & Assumptions
Protect and Enhance Natural Capital Sequestration				
Protect current natural capital stock	Within existing resources.	Costs are assumed to be within existing resources as it is already the responsibility of the council to manage their stock.	TBD by mapping exercise (covered under Priority 1)	This would be a key output of the sequestration mapping exercise covered under priority 1 of Parks and Countryside and highlights the need to complete this enabling action.
Heathland restoration	Estimates on present value per ha <£10,000 over 50 years.	Based on Natural Capital Restoration Review report - Upper: £7,111 over 50 years Lower: £900 over 11 years + one-off cost of £290 for	Dependent on management and restoration option and the data on this habitat shows huge variations	Estimates from Carbon storage by habitat: Review of the evidence of the impacts of management decisions and condition of carbon stores and sources . Table 2 Carbon consequences of some management options in heathlands
Increase natural capital stock	£205,000 (based on £41 for 30 trees).	Woodland Trust, 2019 . Large scale planting.	Planting 148,000 trees or planting on 100 ha of land would save approximately 355 tCO ₂ (approximate offsetting requirement)	Tree are only used for an example, the council should still consider the most appropriate natural capital. This does not include any estimate of the existing sequestration. Estimate based on approximate cumulative carbon sequestration rates for 148,000 trees calculated using the WCC Carbon Calculation Spreadsheet (2019). The rate is based on a scenario that assumes the following: <ul style="list-style-type: none"> - Tree species: sycamore, ash, birch (mix or pure species) - Planted on 100 ha, with spacing 2.5m - Yield class: 8 (according to UK Forestry Commission's 'Carbon Lookup Tables') - No plans to thin or clear-fell at any time. This assumes that 14,800 trees are planted every year up until 2030, where sequestration continues as trees mature. 28% large trees, 51% medium and 21% small.

APPENDIX 6

STAKEHOLDER CONSULTATION SUMMARIES

During stakeholder engagement sessions, we provided attendees with a view of key Action Planning opportunities identified early in the research process. Stakeholders were invited to comment on the actions, indicating key enablers, barriers, and other factors impacting the potential implementation of the action within HDC. Opportunities were also qualitatively ranked on Axis of anticipated Impact vs. Ease of Implementation.

Below we provide a summary views per sector. Note: actions do not fully represent those which appear in the final document as this was early in the consultation process.

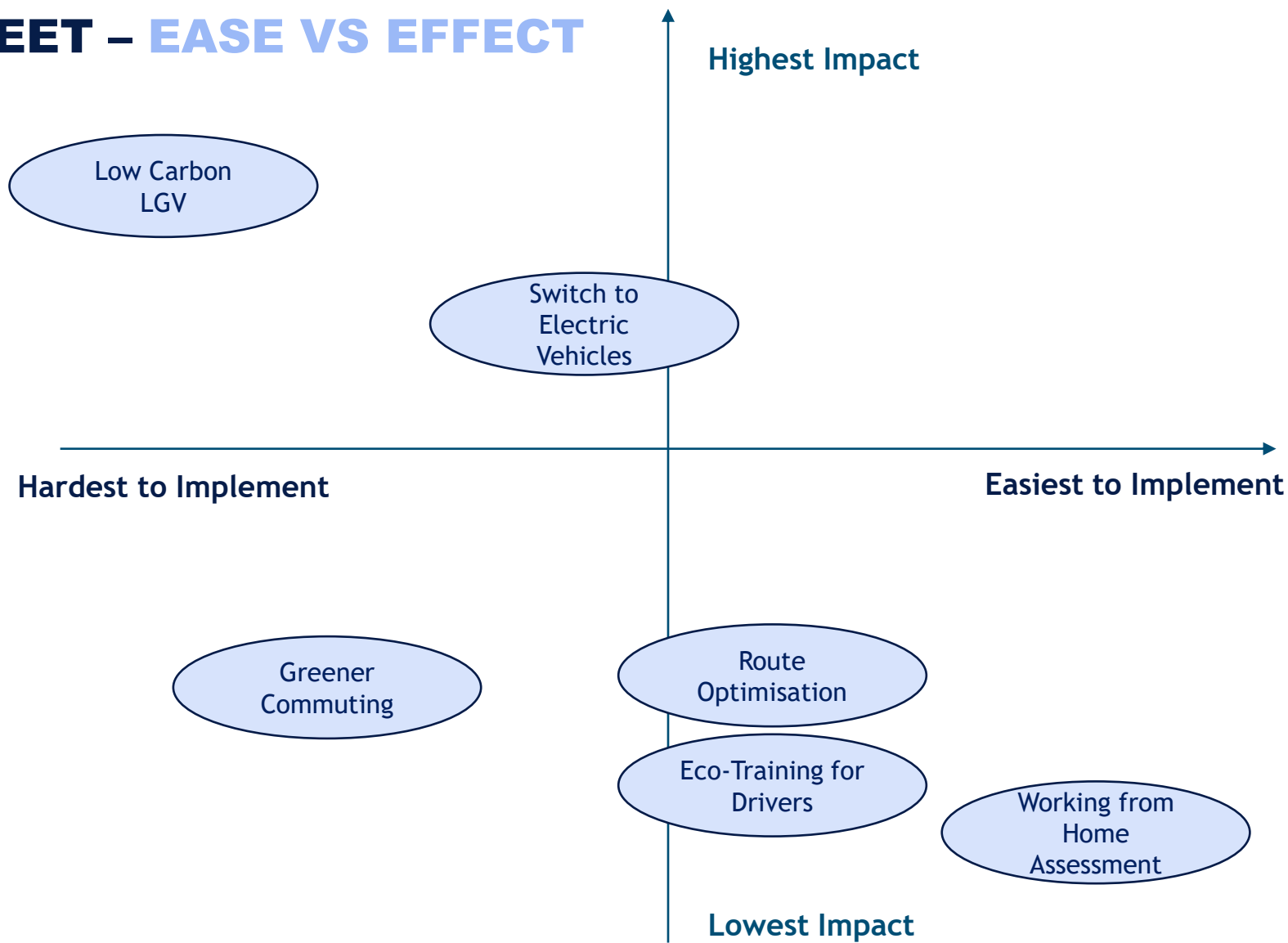
APPENDIX 6

TRANSPORTATION & FLEET – EASE VS EFFECT

Stakeholder Workshop feedback




- Working from home mentioned by every group as something that had worked well so far and should be explored further.
- Cost was cited as a key barrier in switching to alternative fuels, particularly in regards to HGVs which will require significant investment
- Some concerns over infrastructure available for alternative fuels



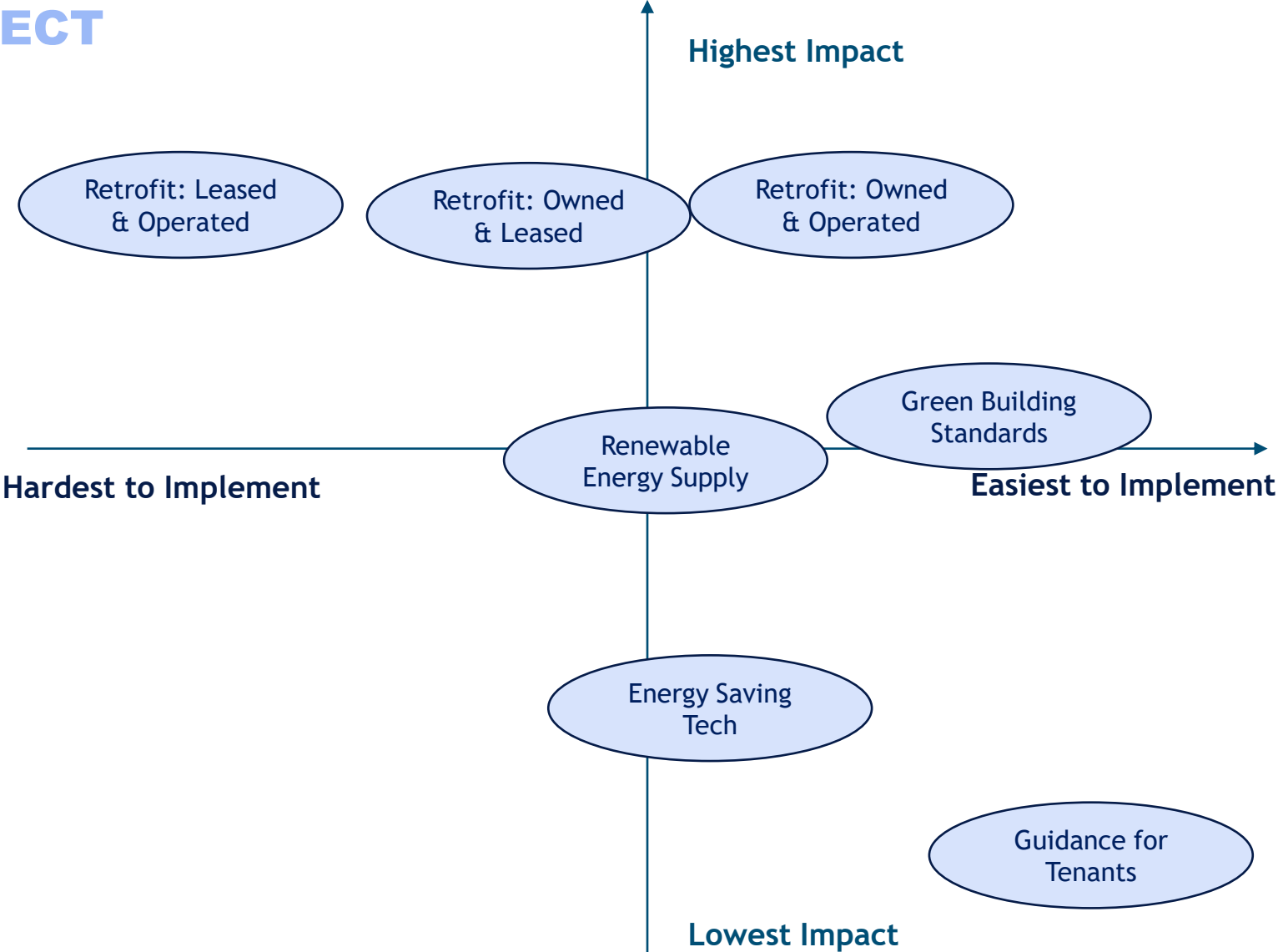
APPENDIX 6

PROPERTY- EASE VS EFFECT

Stakeholder Workshop feedback




- New properties built to high green standards - there has been work to improve this but there is an additional cost.
- Owned and Occupied buildings- could target specific buildings, consider decommissioning buildings if reducing office space. Potential for energy efficiency technologies as there will be a quantifiable cost saving. Generating renewable energy must consider maintenance and dedicated resource
- Leased out - Some existing building regulations in place (e.g. MEES) but need to consider what can be done beyond this. Opportunities for guidance, knowledge sharing and economies of scale. But difficult to make an investment case for energy efficiency improvements



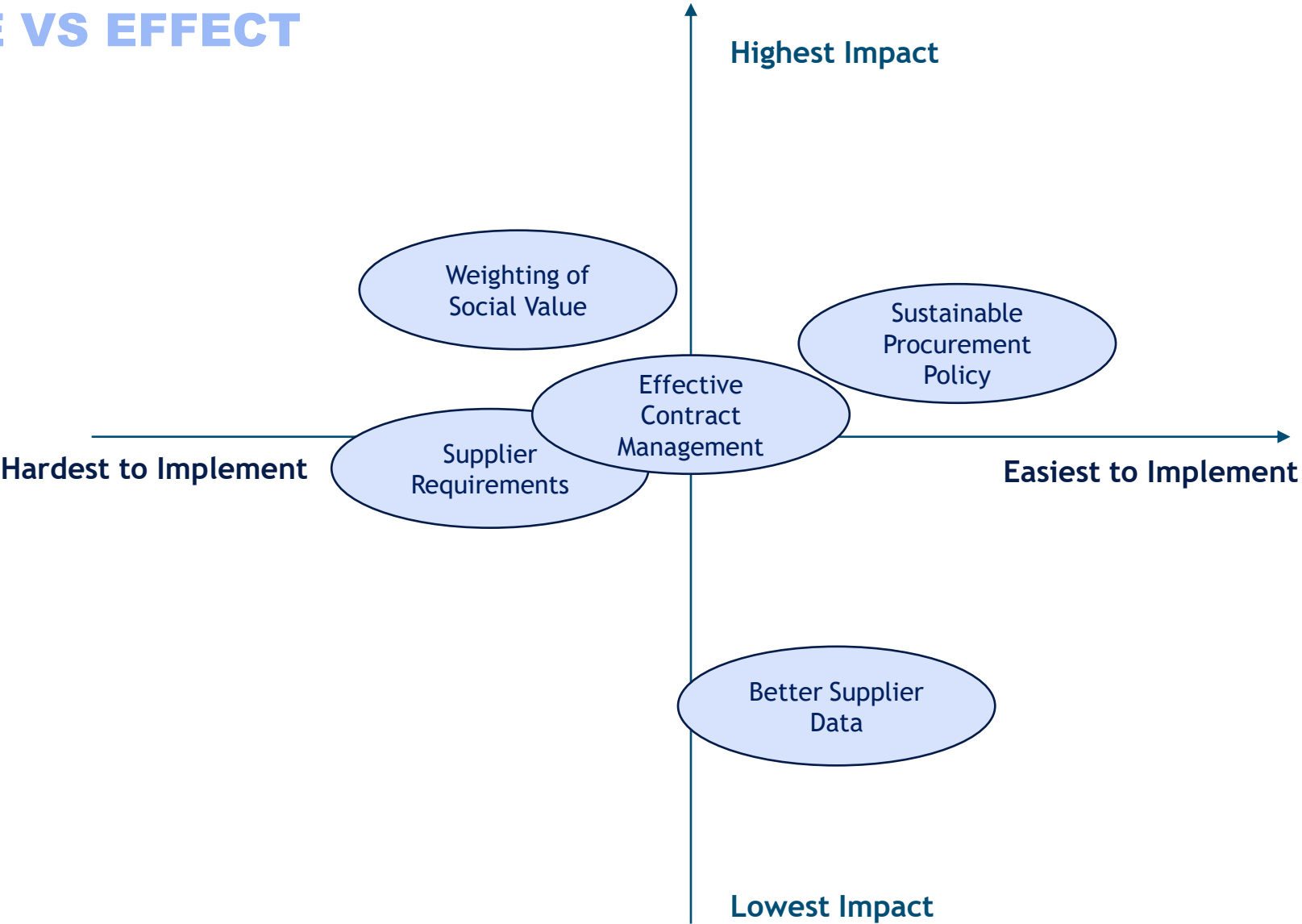
APPENDIX 6

PROCUREMENT – EASE VS EFFECT

Stakeholder Workshop feedback




- General consensus that this is a good opportunity and easy to implement.
- Demand for training of officers to evaluate sustainable criteria and understand how best to manage contracts.
- Some concerns that changes in policy will impact cost. Other barriers suggested include supporting smaller suppliers, long term contracts and legal support if contracts are broken.



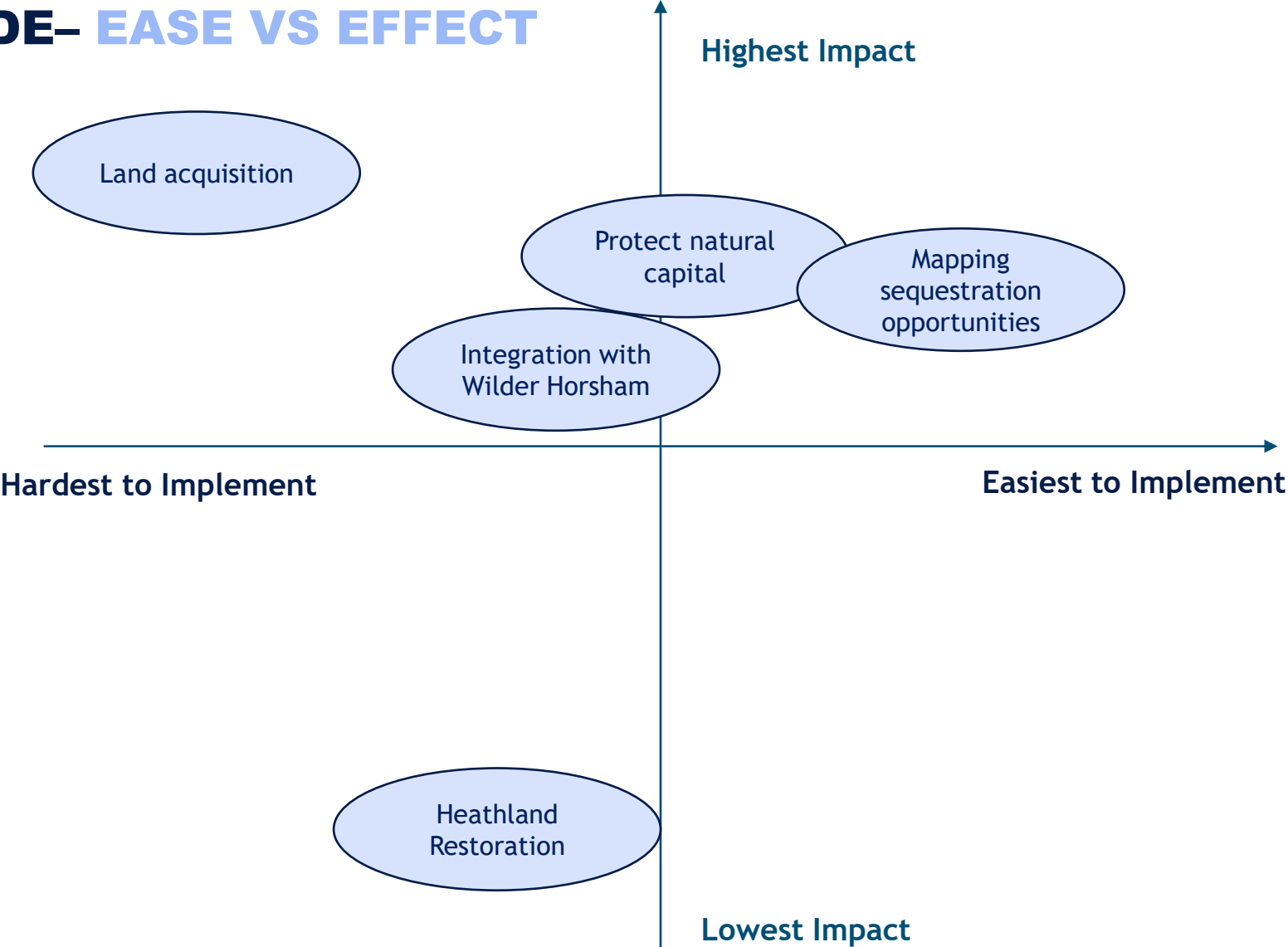
APPENDIX 6

PARKS AND COUNTRYSIDE- EASE VS EFFECT

Stakeholder Workshop feedback



- Identified as an area that meets multiple targets in the corporate plan and presents significant opportunity to link to the ecological emergency and Wilder Horsham.
- Starting point needs to be mapping and carbon assessment of land
- Protecting current stock is important but difficult to enforce and no mechanism in place to demonstrate payback
- Land acquisition through planning system or buying vacant land was agreed to be an expensive approach and highlights the need for a way to assess carbon value



APPENDIX 7

SUMMARY OF MEASURES- ASSUMPTIONS

In our conclusion to the Action Plan, we draw together our recommendations to illustrate the aggregated impact of each action plan opportunity. In addition to those relayed in Appendix 5, this further assumptions:

- Several of the estimates are based on third party proxies and are inherently limited in accuracy.
- HDC should look to perform more robust estimates of figures included and be sure to understand the assumptions made and limitations therein. The estimates are prudent, and not intended to constrain ambition and the council should look to go beyond the targets set.
- Supply and demand side interventions should not typically be added together (to avoid the risk of double counting); however have been presented on the same chart to illustrate the need to consider energy supply projects in the wider district as one way of compensating for any unabated Directly Controlled emissions.



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