Appendix 1.

East Sussex County Council's Climate Emergency Plan 2023-25

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Foreword

Climate change is one of the defining issues of our time: the UN's Intergovernmental Panel on Climate Change concluded recently that if we fail to achieve rapid, far-reaching and unprecedented changes in all aspects of society then we will face catastrophic and irreversible climate change.

More than half of the reduction in carbon emissions required in the UK rely on decisions that are made at a local level – by individuals, businesses and organisations changing what we buy, how we travel and what we eat. East Sussex County Council declared a climate emergency in 2019 in order to play its part.

The aim is simple: for the County Council to become both net zero and resilient to changes in the climate that are already happening. The road to get there is anything but simple: for instance, modelling of how we could get to net zero tells us that it could cost the County Council around £200m between now and 2050 just for those carbon emissions that we control directly.

This action plan takes us part of the way. It sets out the size of our carbon footprint, describes the science-based carbon budget that we need to keep within to play our part in keeping global average temperatures below a 1.5°C increase above pre-industrial levels, and sets out the no and low-regret actions that we will deliver over the next couple of years.

There are many additional benefits of addressing climate change that provide a compelling narrative for change. As an organisation, this includes becoming less vulnerable to the impacts of volatile energy prices, encouraging staff and Members to adopt healthier and more active lifestyles, supporting growth in good quality jobs locally through our investment in carbon reduction measures, and improved local air quality – amongst many others.

Alongside what the Council is doing to show leadership in reducing its own emissions it is also working on a range of projects that reduce carbon emissions across the county, from assisting those in fuel poverty, providing grants to businesses to cut carbon to improving local bus services.

The County Council recognises that no single organisation, acting alone, has the powers or resources to secure the scale of change we need at a local level. It requires shared responsibility for making change and collective effort across the county from all of us. We look forward to working with you to address this critical challenge.

Councillor Bennett, Deputy Leader and Lead Member for Resources and Climate Change.

Councillors Redstone (Chair), Hilton, Hollidge, Holt and Kirby-Green. Working Group on Climate Change (Place Scrutiny).

1. Introduction

In 2018 the UN's Intergovernmental Panel on Climate Change (IPCC) concluded that "rapid, far-reaching, and unprecedented changes in all aspects of society" are required to limit the average global temperature rise to 1.5°C above pre-industrial levels. Even half a degree above that will significantly worsen the risks of drought, floods, mass extinctions of animal species, and extreme heat and poverty for hundreds of millions of people. The IPCC's latest report, in 2022, concluded that global greenhouse gas emissions need to stop rising withing the next 3 years to keep the average global temperature rise to below 1.5°C.

The impacts of climate change are already being felt here in East Sussex, for instance with the record-breaking temperatures and drought experienced in 2022. These impacts are predicted to worsen in the coming years, with more frequent and intense flooding, drought and episodes of extreme heat, as well as impacts from the effects of climate change overseas, such as on food supply. This will lead to an increase in heat-related deaths, particularly amongst the vulnerable and elderly, damage to essential infrastructure, increased cost of food and disruption to supply chains and service provision.

The Council has declared a climate emergency and committed to getting to net zero as soon as possible, and by 2050 at the latest. This is to ensure that the Council makes its fair contribution to cutting carbon emissions, that it adapts to the effects of climate change that are unavoidable, and that it maximises the many benefits of transitioning to become a net zero council. These include reducing energy costs, having healthier and more active staff, and improving local air quality. The Council's commitment has been embedded into the full Council Plan, which can be found here: Council Plan 2022/23 | East Sussex County Council, and into relevant service delivery plans.

The Council developed a corporate Climate Emergency Plan for 2020-22, which can be found here: Climate change – what we are doing | East Sussex County Council. This new Climate Emergency Plan, covering the period up to March 2025, leaves off from where that Plan ended. It sets out the Council's:
- Aim to become net zero as soon as possible.
- Carbon footprint and science-based carbon target.
- Progress to date in cutting carbon emissions.
- Action plan up to March 2025.
- Resources dedicated to delivering the Action Plan.
- Governance, monitoring and reporting systems in place.
- Main risks to delivering the Action Plan.

The Council recognises that the journey to net zero requires additional organisational change, to ensure that climate change is embedded throughout the organisation. It has developed a One Council programme approach, building additional staff capacity within existing teams and committing significant extra funding to increase

the pace and scale of carbon reduction activities. The Council recognises that the earlier and greater the reduction in emissions the more likely we are to contribute to keeping the average global temperature rise to below 1.5^0C and, conversely, the later and slower the reduction in emissions the more likely we are to contribute to exceeding the global carbon budget.

Alongside what the Council is doing to show leadership in reducing its own emissions, it is leading on a range of projects that will reduce carbon emissions across the county, such as significant improvements to local bus services and developing a co-ordinated approach to the provision of on-street electric vehicle charge points, amongst others. The Council is also working with a range of partners, who are shown in section 10. Further details of what is being done across the county can be found here: Environment Strategy 2020 | East Sussex County Council.

This new Climate Emergency Plan has been developed in consultation with a working group of elected Members who sit on the Place Scrutiny Committee, as well as with representatives from all Council departments that sit on the Climate Emergency Board. It has also been peer-reviewed by the Greater South East Net Zero Hub, which has been established by government to accelerate net zero projects across the south east (see: Greater South East Net Zero Hub - Accelerating clean local energy projects (gsenetzerohub.org.uk).

The success of this plan depends on having an effective combination of appropriate policy, decision-making, governance, data, finance, technical competence, communication and forward strategy. This plan sets out how these are in place, or are being put in place, at the Council, alongside the need to maintain the delivery of statutory services and achieve a balanced financial budget.

This report does not cover:
- Embodied carbon, which refers to the carbon emissions associated with the mining, manufacture, transport, construction, repair, maintenance, replacement and deconstruction of materials, such as those required in building works.
- Homeworking, as we currently lack the data to enable this to be calculated.
- The Council's pension fund, because this is being addressed by the Pension Committee and covers many other organisations beyond the Council.
- Carbon emissions that are outside the Council's own corporate carbon emissions. However, as noted above, further details of what is being done across the county can be found here: Environment Strategy 2020 | East Sussex County Council.

2. Terminology

There are six main greenhouse gases (GHGs) that contribute to global warming. Most of these gases arise from combustion of fossil fuels, and some originate from refrigeration, agriculture, chemical production and electrical applications. Each gas has its own global warming potential over a 100 year period (GWP). Carbon dioxide (CO_2) has the lowest GWP of all the gases but is by far the most abundant GHG

gas, hence the focus on CO_2 when discussing climate change. By comparing each gas's GWP to that of CO2 we are able to derive a CO_2 equivalent value (expressed as 'CO_2e'). For example, CO_2 has a GWP of 1, methane has a GWP of 24, therefore we can say that 1 tonne of methane emissions is equal to 24 tonnes of CO_2 (expressed as '24 tCO_2e'). This enables the total global warming potential of a range of greenhouse gases to be presented as a single figure, which simplifies analysis and reporting. In this report 'carbon' is used interchangeably with 'CO_2e'.

Figures for CO_2e are calculated by multiplying the amount of energy used, for instance in units of kWhs for gas or electricity or litres of fuel used in a vehicle, by the amount of carbon produced per unit, using standardised units set by government to ensure consistency in reporting over time.

The terms 'carbon neutral' and 'net zero carbon' are sometimes used inter-changeably and sometimes defined in different ways. For the purposes of this report they are considered to be inter-changeable.

3. UK Climate Change Policy Context

The UK's primary climate change legislation is the Climate Change Act (2008). The Act sets legally binding carbon reduction targets. Originally, it committed the UK to an 80% reduction in carbon emissions from a 1990 baseline by 2050. In 2019 this level of ambition was increased to net zero by 2050.

The Act includes a system of five-year carbon budgets, forming a pathway to net zero. Budgets are set at least twelve years in advance of the budget period, to allow time for planning and investment. The budgets are developed with the guidance of the Committee on Climate Change, an independent body established by the Act, who also monitor and report on progress towards targets.

In 2021 the UK Government published its Net Zero Strategy 'Build Back Greener'. This did not include any statutory responsibility for local authorities to reduce carbon emissions but did set out commitments to:
- Set clearer expectations for local places, clarifying how the partnership with local government should work, and considering how action at national, regional, local, and community levels fits together.
- Provide resources for local places to deliver stronger contributions to national net zero targets,
- Build local capacity and capability.

As the Net Zero Strategy indicates, local authorities are widely considered to have a key role in decarbonising services such as local transport, waste disposal, public buildings and other local services. More broadly, local authorities are seen to have a key role to play in creating change amongst local residents and businesses, via their investment and procurement decisions, planning and placemaking responsibilities, and by direct engagement with residents. In 2021 the National Audit Office reported that 91% of local authorities have adopted a commitment to decarbonise either their own activities, or their local area, or both.

4. The Council's Carbon Footprint

The Council provides services used by all residents in East Sussex, including providing care and support to children, families and the elderly; maintaining the roads and providing library services; and working to boost the local economy. To deliver these services the Council owns a wide range of assets including schools, offices, day centres, care facilities and depots. The Council's property portfolio extends to over 9,000 plots of land (including highways) and over 470 building assets. The Council has used the Greenhouse Gas Protocol, which is the most widely used and accepted global standard for measuring and reporting on greenhouse gas emissions, to measure its carbon footprint from the services it delivers and the assets it owns.

The Greenhouse Gas Protocol divides carbon emissions into 3 categories, or scopes, which are illustrated in figure 1. These are made up as follows:

- Scope 1 – emissions from fossil fuels used in Council buildings and fuel used in our fleet vehicles.
- Scope 2 – emissions from the electricity purchased by the Council.
- Scope 3 – emissions that result from all other activities of the Council, including business travel, water usage, waste, procurement and staff commuting.
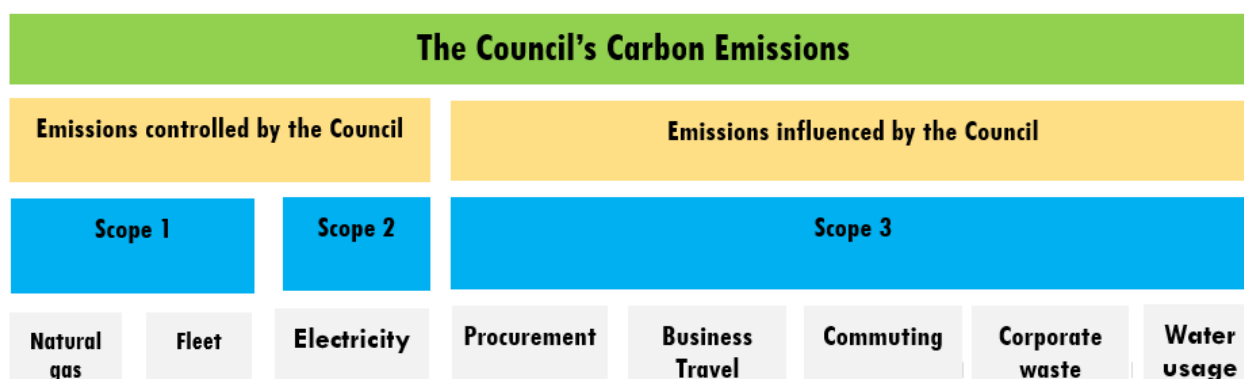

Figure 1. The Council's carbon emissions.

The Council's total carbon emissions in 2021-22 were estimated at 240,650 tonnes of CO_2e. This is equivalent to the average annual emissions of about 34,380 people in the UK and represents roughly 12% of the total CO_2e emissions from East Sussex, based on government data for 2020 (see: UK local authority and regional greenhouse gas emissions national statistics, 2005 to 2020 - GOV.UK (www.gov.uk). The split of emissions across scopes 1-3 is shown in figure 1a, below, which highlights that by far the largest part of the Council's emissions are from scope 3. This is typical for most local authorities, because most of the Council's budget is spent on procuring goods, works and services from third parties.
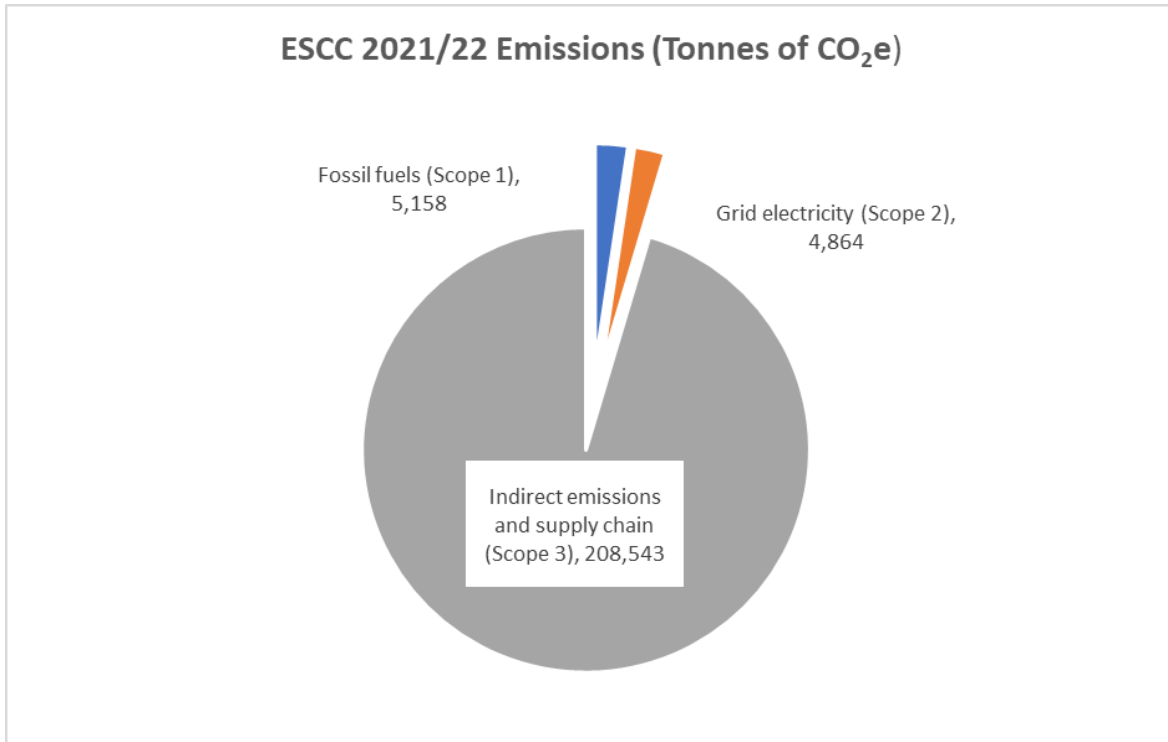
Figure 1a. Council scope 1-3 emissions in 2020-21.

The Council has good quality data for scope 1 and 2 emissions, as these elements are under the direct control of the Council. Our targets in this plan relate to this part of the Council's carbon footprint. How the Council is addressing scope 3 emissions is set out on pages 10 and 11.

Emissions we have direct control over

Figures 2 and 2a provide a detailed breakdown of emissions that the Council has direct control over (i.e. scope 1 and 2 emissions). Figure 2 highlights that schools are the largest source of carbon emissions and that emissions from the Council's own fleet are very small compared with emissions from using gas, oil and electricity in buildings. The government announced in 2022 that its policy is for all schools to convert to academy status by 2030. If this were to happen then all emissions from academy schools would leave the Council's portfolio, although they would clearly remain a source of carbon emissions within the county and would become the responsibility of each academy trust to address.

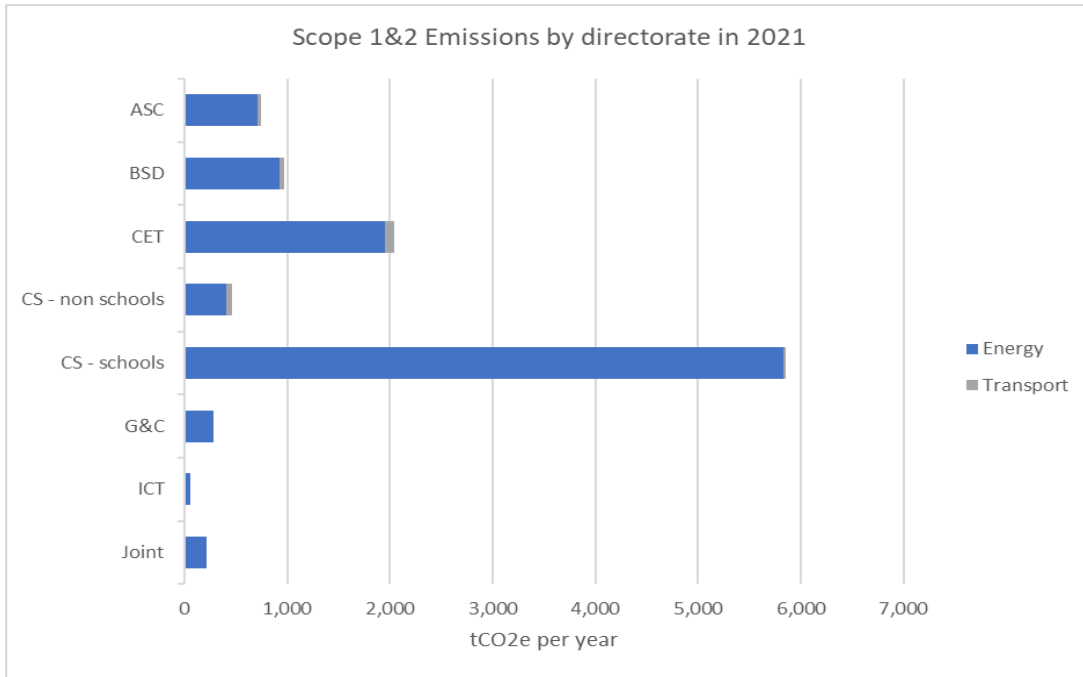Figure 2: Scope 1 and 2 carbon emissions by department in 2020-21.

(Note: ASC is Adult Social Care. BSD is Business Services Department. CET is Communities, Economic & Transport. CS is Childrens Services and G&C is Governance and Communities).

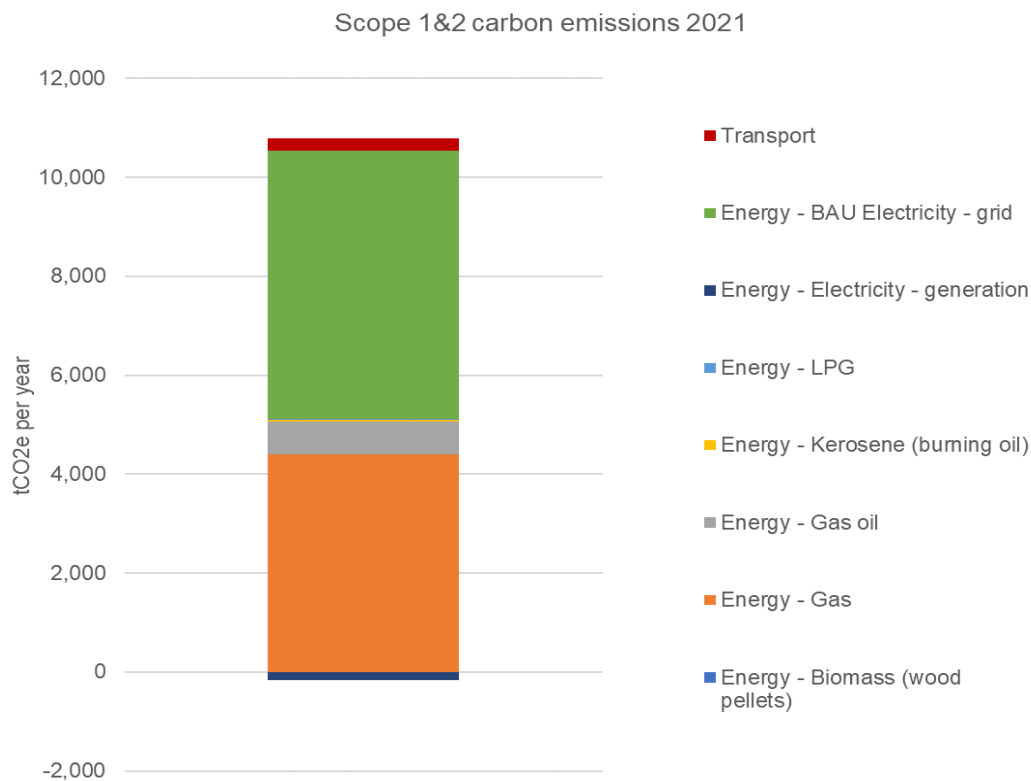Figure 2a highlights that scope 1 and 2 emissions are dominated by the use of grid electricity and gas.

Figure 2a. Scope 1 and 2 carbon emissions by energy type in 2020-21.

Emissions we can influence

The largest part of the Council's carbon footprint is in areas that we don't have direct control over but can influence (ie. Scope 3 emissions). These emissions are estimated to be around 20 times greater than the emissions over which we have direct control. Figure 3 shows that the vast majority of the emissions from areas that the Council can influence are from the goods, works and services that are purchased by the Council in order to deliver its functions, including major services such as highways maintenance, waste disposal, education and social care provision. This is typical for a local authority, as most of the Council's revenue and capital budgets are used to procure goods, services and works from third parties. In other words, the Council's scope 3 emissions are mostly the scope 1 and 2 emissions of the Council's suppliers.
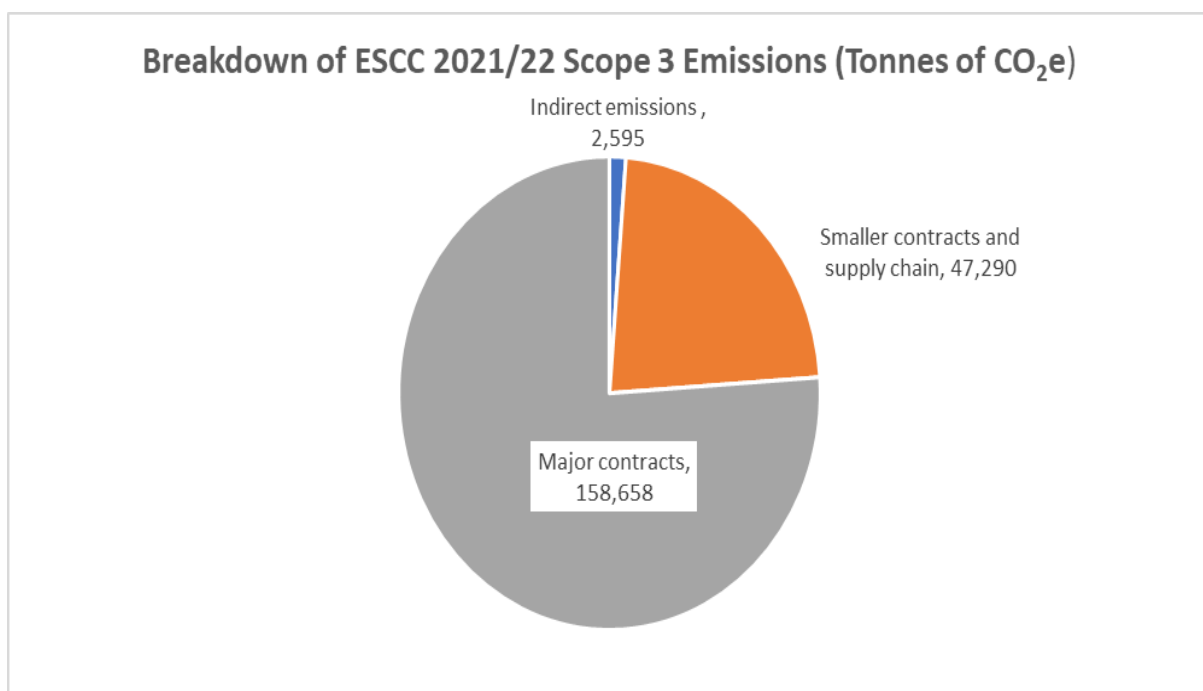
Figure 3. Overview of ESCC's scope 3 emissions in 2020-21 (tCO$_2$e).

Figure 3a provides the estimated breakdown of emissions from the Council's supply chain, using proxy values in the absence of accurate carbon data from most suppliers. Using proxy values indictes that about 90% of procurement emissions come from about 11% of our suppliers. Figure 3a highlights that the four main areas are transport, waste, care services and property, which form part of statutory functions that the Council must deliver.

Breakdown of ESCC 2021/22 Contract and Supply Chain Emissions (Tonnes of CO_2e)

Category	Tonnes of CO_2e
Ground passenger transport	70,808
Waste Disposal	58,158
Nursing and residential care	29,270
Other	19,631
Home healthcare	8,866
Architectural, engineering and related	5,966
Manufactured products	4,797
Educational services	4,079
Non-residential maintenance	3,951
Highways (Contractor's scope 1 and 2)	422

Figure 3a. The breakdown of carbon emissions by different types of supplier.

It's more difficult to measure the carbon emissions from suppliers than from our own buildings and fleet because we rely on information being provided by suppliers. We are unable to include these emissions in the Council's carbon reduction target un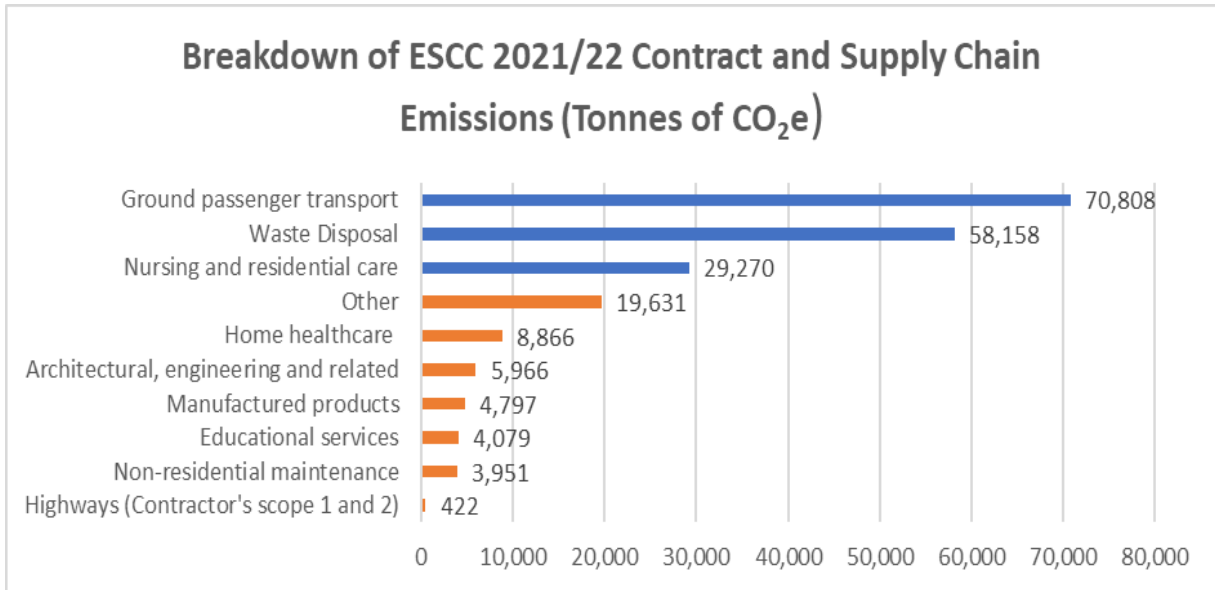til we have a reliable baseline, otherwise we will not be able to measure and report on progress in any meaningful way. This action plan includes steps that the Council is taking to work with our partners and supply chain to measure a more reliable carbon baseline and establish reduction targets, possibly on a contract-by-contract or service area basis. An estimated 54% of local authorities are currently reporting on scope 3 emissions (LGA, 2021).

A more detailed assessment of the Council's carbon footprint is provided in appendix 1.

5. The Council's Carbon Targets

In 2015 196 countries, including the UK, signed up to the UN's Paris Climate Change Agreement to try to keep the increase in average global warming below 1.5^0C above pre-industrial levels. To keep below a 1.5^oC increase requires a limit to the total quantity of greenhouse gases released to the atmosphere. This is the global carbon budget, which can be divided into national and sub-national budgets. All emissions above this budget will contribute to exceeding the 1.5^0C threshold.

The UK's Tyndall Centre for Climate Change Research has developed a methodology to calculate the total remaining carbon budget for each local authority area between now and 2100. This methodology tells us how quickly we need to cut carbon emissions in East Sussex in order to keep within our carbon budget. The Tyndall Centre estimates that the total remaining carbon dioxide (CO_2) budget for the whole county is about 14 million tonnes, which equates to driving round the circumference of the earth about 2.4m times in an average petrol car. At current

emission levels this budget will be exceeded in 7 years. To stay within this budget requires cutting emissions from the county in half every 5 years.

In 2009 the Council committed to cutting corporate carbon emissions by 3% per year, which was in line with the previous national target of an 80% reduction between 1990 and 2050. In 2019 the Council updated this and committed to becoming carbon neutral from its own activities as soon as possible, and by 2050 at the latest. In 2020 it set out a corporate Climate Emergency Plan for 2020-22 that committed to reducing scope 1 and 2 carbon emissions in line with the Tyndall Centre's methodology, namely to reduce carbon emissions in half every 5 years. This is a science-based target that ensures that the Council is making its fair contribution to keeping average global warming to 1.5^0C above pre-industrial levels, as agreed by at the UN's Paris Climate Change Agreement in 2015. Figure 4 sets out the Council's five year carbon budgets from 2020-50.

This approach to targets is in line with advice to Councils from the Local Government Association, which has stated that: "*There is no science to picking an end year where emissions are zero. Setting a target year by which emissions will be zero can be symbolically important. However, what counts is the trajectory of the commitments to carbon reduction between now and the target zero emissions year. This defines the actual level of emissions reduction being promised over the budget period. This is what matters to climate change*".
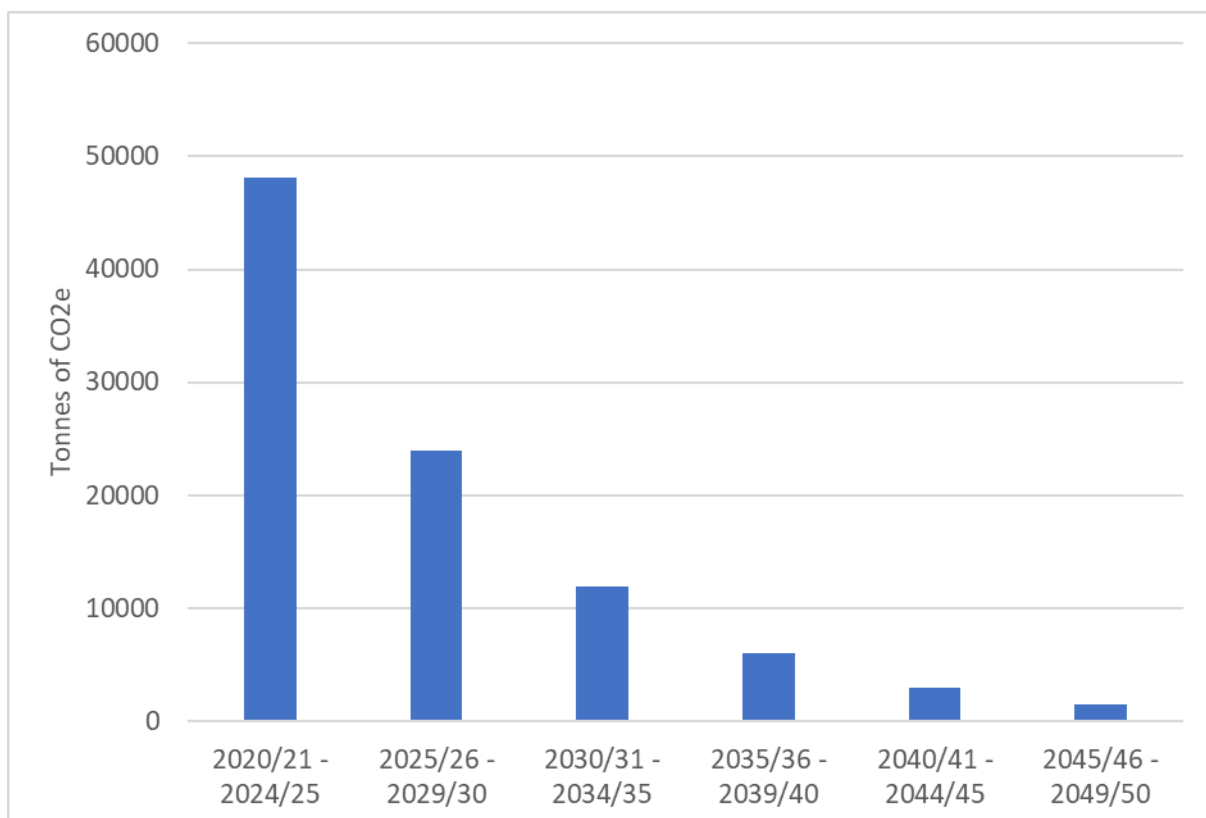

Figure 4. The Council's five year science-based carbon reduction budgets for scope 1 and 2 emissions.

As mentioned above, the Council's carbon reduction target currently applies to scope 1 and 2 emissions but not currently to scope 3 emissions. As noted in section 3, further work is required to quantify most scope 3 emissions before they can begin to be integrated reliably into the Council's carbon baseline and against which progress can then be measured. Most local authorities are in a similar position.

Figure 5, below, provides an indication of the scale of the challenge for the Council to keep within a science-based carbon budget. The orange bars show how emissions are expected to reduce over time in the business-as-usual scenario. In other words, if the Council were to do nothing then its carbon emissions will reduce because of the national measures being taken to decarbonise the UK electricity grid, with renewables and nuclear power continuing to replace coal and gas, as well as the gradual take up of electric vehicles to replace petrol and diesel vehicles. The blue dotted line on the graph shows the carbon reduction that the Council needs to achieve up to 2050 in order to keep within its science-based carbon budget. Therefore, the Council's challenge is to cut out all the carbon emissions shown as the orange columns that are above the blue dotted line. Achieving this is extremely challenging and is likely to become more costly and complex to reach over time as the more cost-effective and simpler measures are delivered.

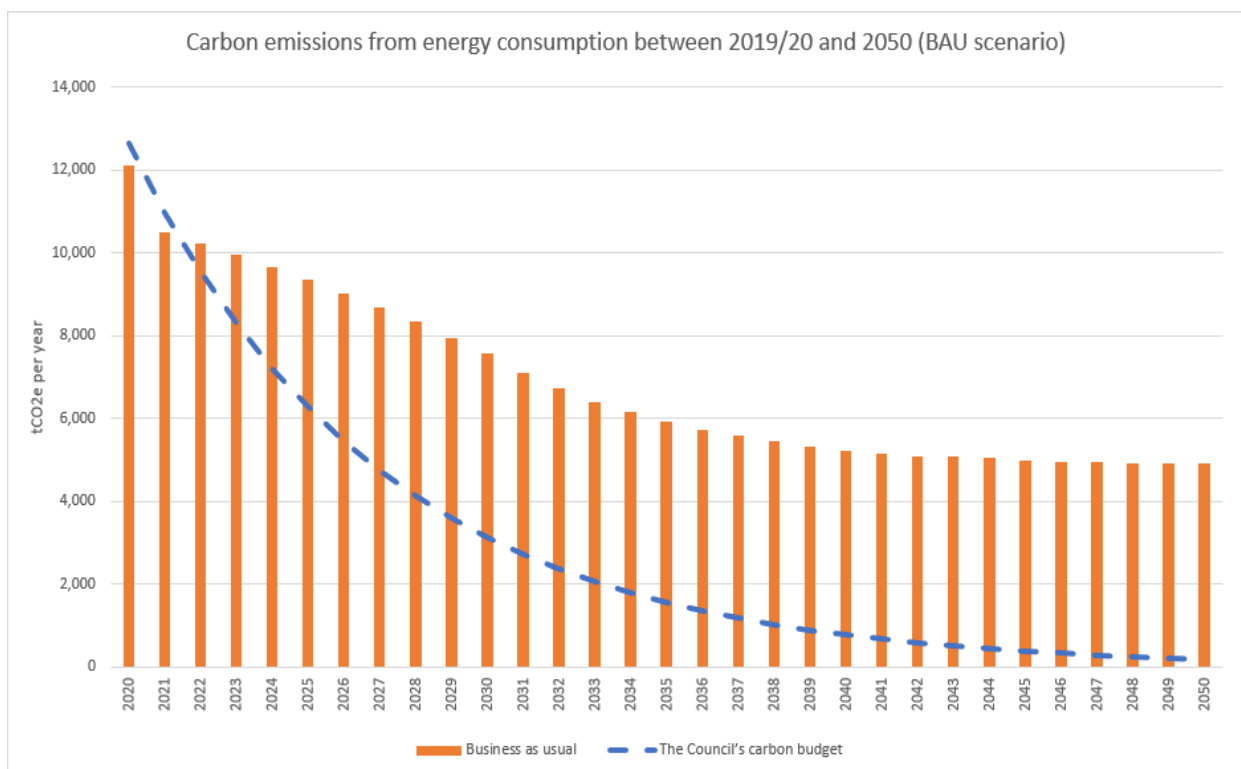Figure 5. Scope 1 and 2 business-as-usual carbon emissions to 2050 and the Council's science-based target.

Figure 5 indicates that the earlier and greater the reduction in carbon emissions the more likely we are to contribute to remaining within the global carbon budget and, conversely, the later and slower the reduction in emissions the more likely we are to contribute to exceeding the global carbon budget.

6. Progress to Date in Reducing Council Carbon Emissions

Between 2009-10 and 2021-22 the Council's scope 1 and 2 emissions reduced by over 66% (figure 6). This was achieved by the council investing in over 300 projects worth more than £4m that have generated annual savings of £850,000. The decarbonisation of the national electricity grid has also assisted, with gas and renewables largely replacing coal over recent years. Finally, the reduction in the size of the corporate estate has also had an impact (eg. through the conversion of some schools to Academy status).
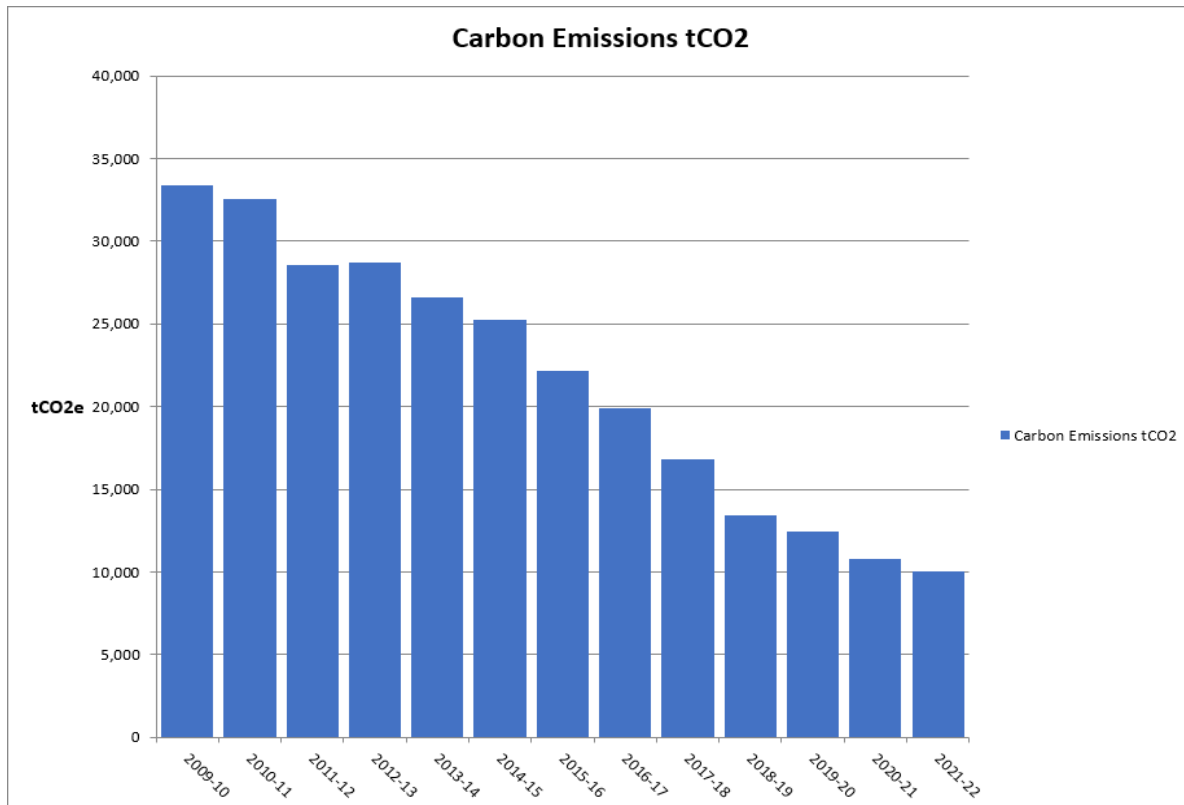
Figure 6. The Council's carbon reduction between 2008-9 and 2021-22.

The following are some of the measures that the Council has delivered:

1. Installed a number of energy efficiency measures in ESCC buildings and street lighting through the £1.025m Salix invest-to-save fund and County Council maintenance budgets, including replacing all the windows at County Hall. The Salix fund has been used in over 300 projects worth more than £4m, which have generated annual savings of over £850,000.

2. Installed nearly 1.5MW of renewable energy generation on buildings which, in addition to reducing energy bills, generated an income from the Renewable Heat Incentive and Feed In-Tariff of approximately £8,000 in 2021-22.

3. Changed the way we work. For example, our agile working programme enables staff to work flexibly from a range of sites, including from home. It enables the Council to have a reduced number, and to make more efficient use, of buildings and enables a reduction in travel through staff and Members being able to be connected whilst working remotely.

4. Improved the energy efficiency of our ICT services, for instance through moving to the Surrey Data Centre.

5. Encouraged behaviour change, for example by providing the ICT equipment, tools and support to enable Members and staff to work digitally and providing discounted travel by public transport and season-ticket loans to encourage the use of public transport.

6. Changed our approach to procurement to enable more goods and services to be delivered by local businesses, which reduces the transport impact of our supply chain.

7. Purchased electricity for buildings and street lighting supplied from renewable sources, independently certified through the Renewable Energy Guarantees of Origin scheme (REGOs). This started on 1 April 2020 and will continue, subject to availability and price. This applies to corporate sites and has been offered to schools. This action is not counted towards the Council's carbon reduction target as this is not considered to be good practice because, although it signals a growing interest in renewables to companies that generate and supply electricity, it does not directly increase the investment in renewable energy generation.

Table 1 and figure 7 set out the Council's progress to date in meeting its first five year carbon reduction budget, which covers 2020-25. A reduction of 13% was achieved in 2020-21, due to a combination of investment in carbon reduction measures, the continued decarbonisation of the national electricity grid and because Covid lockdowns led to lower heating demand for many buildings and less business mileage. In 2021-22 the Council achieved a reduction of 7%, which was also due to a combination of continued investment in carbon reduction measures and the ongoing decarbonisation of the national electricity grid. The carbon reduction achieved in 2021-22 was lower than in 2020-21 because there was a rebound in carbon emissions as schools and staff began to return to a post-Covid new 'normal' and because the spring of 2021 was colder than the spring of 2019-20, which led to an increase in energy usage for heating.

Table 1. Scope 1 and 2 target and actual emissions 2019-20 to 2024-25.

Year	Target footprint (CO₂e)	Actual emissions (CO₂e)	Actual reduction (%)	Cumulative target (%)	Cumulative reduction (%)
2019-20	Baseline year	12,461	n/a		n/a
2020-21	10,841	10,791	-13%	-13%	n/a
2021-22	9,432	10,023	-7%	-24%	-20%
2022-23	8,206			-34%	
2023-24	7,139			-43%	
2024-25	6,211			-50%	

Figure 7 provides a summary of progress during 2020-22 against the five year carbon budget for 2020-25.
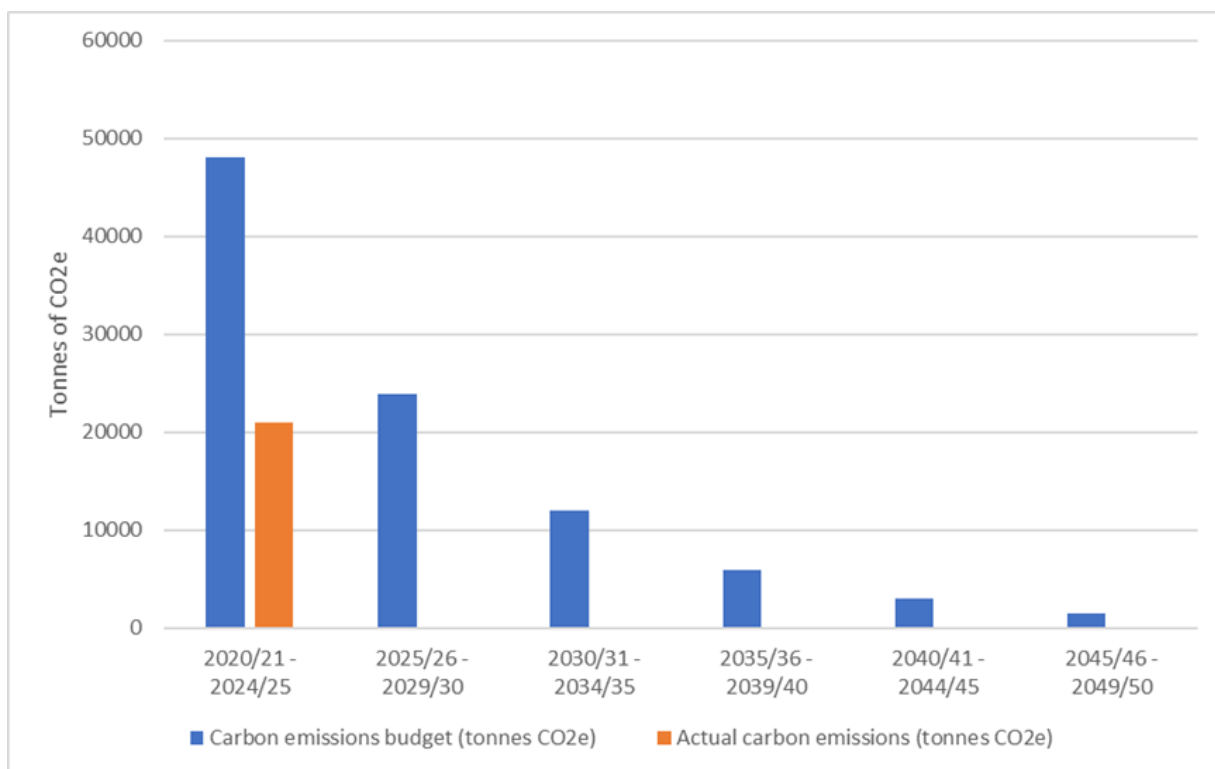
Figure 7. The scope 1 and 2 five year carbon budgets and actual emissions to date.

7. Delivery Plan Up to March 2025

The following section sets out the action plan up to March 2025. The reason why the plan does not cover a longer period is because this is as far into the future as we can reliably predict our finances. The actions beyond March 2025 will be shaped into an updated climate emergency plan during 2024. These future actions will be developed based on the modelling that has been carried out, the lessons that we learn in delivering this Action Plan and in light of changes to legislation, resources and technology (eg. hydrogen for heating and transport).

This section sets out:
1) The guiding principles that the Council will work to.
2) The conclusions from modelling work as to what the Council should prioritise.
3) The resources that the Council is dedicating to addressing climate change.
4) The actions that the Council will deliver up to March 2025.

7.1 Guiding Principles

The following sets out the principles that the Council has adopted to guide the development and delivery of this Action Plan:

1) Organisational change: the Council will seek to embed climate change throughout the organisation, from relevant policies and decision-making

through to everyday employee and Member working practices, as it is a cross-cutting challenge.

2) Carbon budget: the Council recognises the importance of early action and will aim to cut carbon emissions as quickly as possible, within the constraints of existing resources.

3) Carbon hierarchy: figure 8 illustrates the carbon hierarchy, which sets out the actions that should be taken to address climate change, from the most sustainable option at the top to the least sustainable option at the bottom. The Council will follow the hierarchy in a pragmatic way, prioritising measures higher up the hierarchy where possible but aiming to cut carbon rapidly and at least cost.

4) Prioritisation: the Council will predominantly invest in decarbonising buildings that are expected to be retained in the long term and will only invest in assets, such as new boilers, where existing assets are due for replacement and/or are particularly energy inefficient. These are identified through a robust and documented process.

5) Making best use of resources: the Council will invest in measures that bring the best carbon and cost return on investment, for example measures that will reduce energy bills.

6) Mobility: the Council will support transport options for staff and Members that reduce carbon, support equality and do not adversely impact on service delivery.

7) Offsetting: the Council will invest in high quality and verifiable offsets. The Council will develop a policy that will guide its investment in carbon offsetting and review the policy as both best practice and offset markets evolve.

8) New build: the Council will look to ensure that major construction works are net zero, where practicable, to minimise the risk of increasing the Council's carbon footprint and having to incur further costs to retrofit buildings later on.
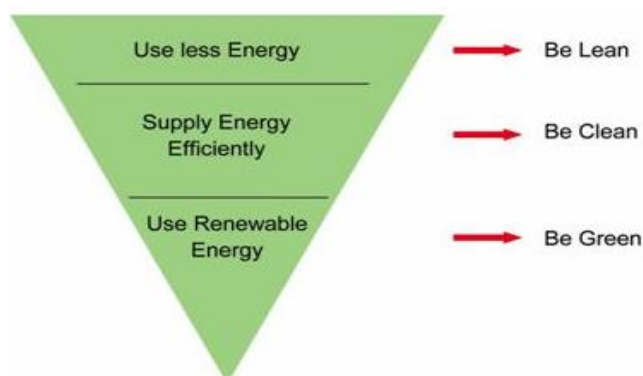

Figure 8. The carbon hierarchy.

7.2 Modelling Results

The Council commissioned Currie & Brown, an international asset management and construction consultancy, to investigate how the Council could get to net zero and at what cost. Currie & Brown were asked to produce:

- A strategic heat decarbonisation plan for the Council's buildings portfolio.
- A number of building-specific heat decarbonisation plans, which identified the most cost effective mix of carbon reduction measures to implement.
- A model to help identify how the Council could get to net zero and at what estimated cost for scope 1 and 2 emissions.

The model included the following four scenarios for scope 1 and 2 emissions:
1) The effect of no further Council expenditure on carbon reduction.
2) The effect of the existing budget of £9.8m up to March 2025.
3) The effect of the Council spending £3m per year up to 2050.
4) The scale of budget required to get to net zero by 2050 at the latest.

The model assessed the optimal mix of investment across various types of carbon reduction measures, namely decarbonising heat in buildings, installing solar PV, entering into a power purchase agreement (essentially a contract between the Council and a supplier of renewable electricity) and investing in vehicle electrification. Table 2 provides a summary of the costs and carbon reduction that were modelled with each scenario. This includes the total cost (the gross cost) and the net discounted cost to 2050, which takes into account a reduction in the Council's energy bills as a result of the investment in energy efficiency and renewable energy measures, and using a discount rate of 3.5% per year.

The model includes a number of simplifying assumptions, for example that the Council's estate and service delivery do not change over time and that technology and energy costs also remain static. Consequently, the modelling should be seen as a useful indication of the scale of the challenge rather than a definitive road map for decarbonising the Council's scope 1 and 2 emissions. Officers have been trained to use the model so that different scenarios, including a blend of different measures, can be tested, and to update the assumptions over time. This will include, for example, asset rationalisation (using fewer buildings) in line with the Council's Asset Management Plan for 2020-25, carbon offsetting, behavioural change programmes and so on, in order to identify the greatest carbon reduction at least cost. This work has helped to provide the evidence base for the carbon reduction investments outlined in this action plan to March 2025 and will be used to inform Council investment beyond March 2025. The model will also be used with scope 3 emissions, once the quality of scope 3 data is suitably robust. The executive summary of the modelling report is set out in appendix 1.

The modelling work indicates that:
1) The Council is currently investing in an appropriate mix of interventions, including low energy lighting, heat decarbonisation, solar PV and vehicle electrification. By far the largest opportunity to meet the Council's decarbonisation target is to reduce the consumption of gas and gas oil in buildings, notably by replacing gas and oil-fired boilers with heat pumps.

2) As illustrated in figure 5, a significant reduction in scope 1 and 2 carbon emissions is predicted to occur with little to no intervention from the Council, as a result of the continued activity at a national level to decarbonise the UK electricity grid and the gradual replacement of petrol and diesel vehicles with electric alternatives.

3) The cost for the Council to get to net zero for scope 1 and 2 emissions could be approximately £200m between now and 2050.

4) There is no one single 'correct' route to net zero but a variety of possible paths, each with different cost and carbon implications, some of which are currently uncertain (eg. the future role of hydrogen in heating and transport).

5) An area the Council is exploring is power purchasing agreements, which could deliver carbon reduction from 2026, once the Council's current electricity supply arrangements have ended.

Table 2. Summary of modelled scenarios.

Scenario	Measures	Gross cost (£)	Net discounted cost to 2050 (£) [1]	% carbon reduction by 2050 [2]
1. Business as usual	National measures only: continued grid decarbonisation, move to EVs & tighter building regulations	0	0	59%
2. Current budget for climate change (£9.9m to March 2025)	National measures plus: energy efficiency, decarbonisation of buildings, solar PV, electric vehicles and offsetting	£9.9m	£2m	61%
3. Additional budget for climate change (£3m p.a. to 2050)		£77m	£23m	74%
4. Budget required to reach net zero, including schools		£200m	£50m	98%

[1] = This is the cumulative net cost up to 2050, taking into account the savings in energy bills and using a discount rate of 3.5%.

[2] = This is the reduction in annual carbon emissions by 2050 in CO_2e compared with the baseline year of 2019-20.

The modelling indicates that, for the Council to remain within its science-based carbon budget, most of the estimated £200m required to get to net zero would need to be incurred over the next 15 years, as illustrated in figure 8a. This is because cutting carbon emissions early leads to a greater cumulative reduction of carbon over time.
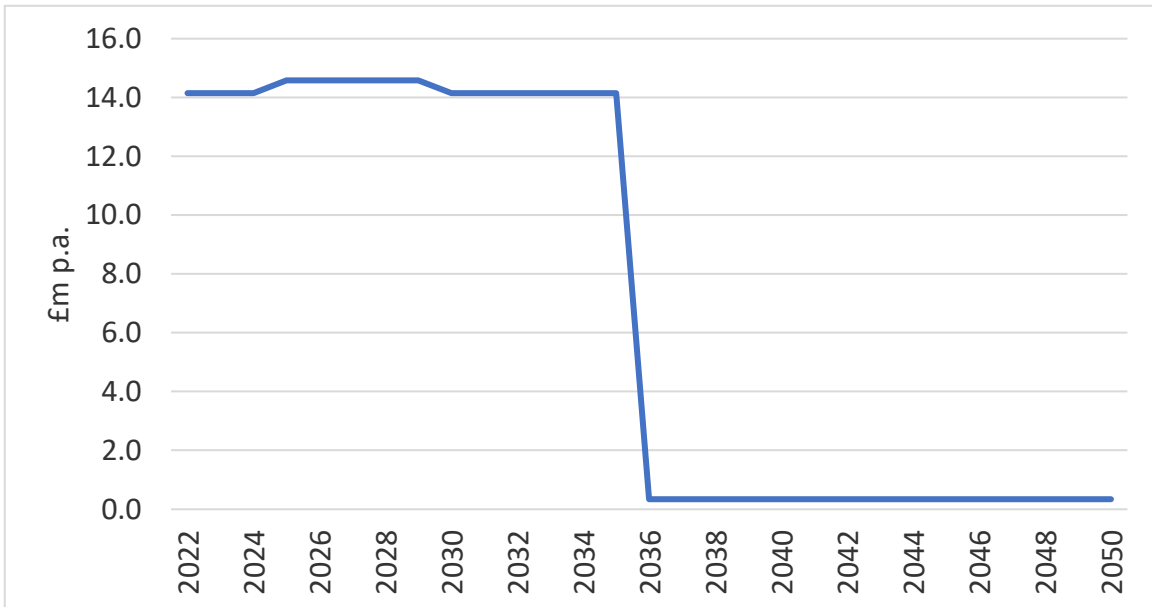
Figure 8a. The annual spend required to remain within the Council's carbon budget (Currie & Brown modelling, 2022).

7.3 Resources to Deliver the Plan

The resources required to deliver an effective climate change mitigation and adaptation programme are primarily staff and finance. The Council currently funds carbon reduction measures through a mix of its own resources, a 'Salix recycling fund' and bids for external funding.

The Council has had a 'Salix recycling fund' of £1.025m since 2007. The fund was set up by government to increase capital investment in energy-efficient technologies across the public sector. It is a ring-fenced fund with capital provided by government and matched by the Council, to be spent on corporate energy-saving projects with payback periods of up to 10 years. The financial savings delivered by the projects are returned to the fund, allowing further spending on projects, hence the term 'Recycling Fund'. The government has decided that the fund will cease in March 2025 and the Council will have to return the government's match funding. Since 2007 the Council has invested more than £4m in over 300 projects, which have generated annual savings of approximately £850,000.

In order to increase the pace and scale of carbon reduction, in November 2021 Cabinet committed an additional £3.867m of Council funding to address corporate climate change, and in February 2022 agreed a further £3m per year for 2023-25. This has been supplemented by successful bids for external funding of £878,000 in the last 18 months. A further bid has been submitted to the government's Public Sector Decarbonisation Fund in October 2022 for £1.3m to part-fund the decarbonisation of heat at 7 additional sites that need new heating systems (see appendix 2). The Council will continue to bid for all suitable external funding to support delivery of its carbon reduction programme.

The Council has also invested in staff resources to establish an appropriately resourced and co-ordinated One Council climate change programme. New posts are being funded from the additional budget allocated by Cabinet up to March 2025 and will be less than 10% of the annual budget for climate change. The additional staff resources will mostly be embedded into existing teams, notably the Property, Procurement and Finance teams, which will enable the pace and scale of change to be increased and will help to ensure that climate change workstreams become part of business-as-usual within key teams. Staff resources are supplemented from time to time with external consultancy expertise, where this is a more cost-effective means to address a particular need, for instance on modelling scenarios to net zero.

Despite the significant investment being made by the Council to address climate change it is clear from the modelling work that the scale of funding to get to net zero is significantly greater than the Council can afford, given other financial uncertainties and pressures. Some investments, such as in low energy lighting and solar PV, deliver a return on investment and represent relatively low cost and low complexity measures. However, a key challenge is that the costs are incurred up-front and the savings take time to be delivered. Other measures to reduce carbon, notably heat decarbonisation, provide a payback over a very long period, and some interventions increase costs and deliver no financial savings, for instance purchasing carbon offsets.

Table 3 provides a summary of the budget and the current expenditure profile up to March 2025. The budget allocations for 2023-24 and 2024-25 are indicative at this stage, as they are partly dependent on the outcome of bids for external funding. Therefore, the budget in table 3 and the action plan in table 4 will be reviewed regularly, in light of changing resources and other key factors.

The Council will also assess other sources of funding for carbon reduction measures, including the Public Works Loan Board and possible finance from third parties for schemes such as solar PV. However, the clear main need is for significant, non-competitive and long-term financial support from central government. Currently, there is no indication from central government as to how local authorities will be able to access the necessary scale of funding to get to net zero.

Table 3. Budget summary.

Budget source	Spend & forecast (£m)				Total (£m)
	2021-22	2022-23	2023-24	2024-25	
ESCC	0.62	2.542	3.853	2.852	9.867
Salix Fund	0.293	0.174	0.113	Tbc	0.579
External funding	0.670	0.207	0.853	Tbc	1.731
TOTALS:	1.583	2.923	4.819	2.852	12.177

For funding beyond 2024-25, the Council has a well-established annual process (called 'reconciling policy, performance and resources') through which budget allocation is made for core needs, including climate change.

<u>7.4 The Climate Change Actions</u>

This section sets out the actions and outputs that will be delivered up to March 2025. Together, they represent a comprehensive programme that will continue to embed net zero into how the Council operates, that will engage and empower staff and Members to take action, will drive evidence-based investment into measures that reduce carbon and energy costs, and begin to plan for those climate change impacts that are unavoidable.

The additional funding agreed by the Council for climate change work up to March 2025 will mainly be invested in low energy lighting, decarbonising heat in buildings, solar PV, enabling the transition to electric vehicles and behavioural change. The pipeline of projects is under continual review and so the actions may change during the lifetime of this Climate Emergency Plan, for instance if the Council secures additional external funding or due to unforeseen challenges, such as in the supply chain.

Organisational Change

A priority action is to embed climate change into the culture of the Council. A number of the measures within the Action Plan support this objective, for instance embedding climate change staff into key teams and rolling out carbon literacy training. The Council will also develop and implement a process to align relevant decisions with its net zero commitment. This will include reviewing existing Council policies, strategies and programmes and ensuring that net zero is a whole organisational endeavour. To support this, a communications and engagement programme is being delivered with staff and Members, to provide the knowledge and skills to support organisational change.

Asset Rationalisation

One of the most effective ways to reduce an organisation's carbon footprint is to reduce the number of buildings and other assets needed to deliver its services. The Council will continue to carry out regular reviews of its assets, particularly in light of the new ways of working post Covid which may mean that fewer buildings are needed by the Council to carry out its functions. Figure 9 summarises the number and types of sites owned by the Council.
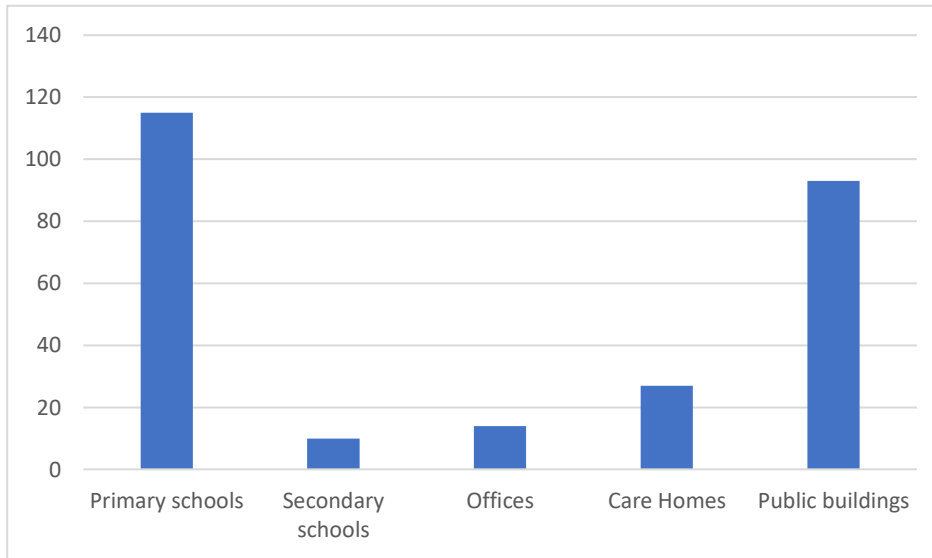
Figure 9. The number and types of sites owned by the Council.

Decarbonising Heat

Decarbonising heat in existing buildings is a key priority for the Council because heating accounts for over 50% of total scope 1 and 2 emissions. The independent modelling carried out made it clear that the Council cannot get to net zero without significant investment in decarbonising heat. In addition, the government has set out an ambition to prohibit the installation of oil-fired boilers from 2024 and gas fired boilers from 2035.

Decarbonising heat usually entails replacing gas or oil-fired boilers with heat pumps, which are powered by electricity, which has a lower carbon footprint than oil or gas. This often requires additional work to improve the building fabric in order to reduce heat demand (or cooling in the summer), as heat pumps tend to have a lower heat output and currently have higher running costs. This 'whole building' and 'fabric first' approach can be a complex process, particularly in older buildings. In addition, switching to a heat pump currently costs significantly more than a like-for-like oil or gas boiler replacement, as building fabric and other load reduction measures are usually required to prevent an increase in site running costs. Currently, capital costs are approximately 8 times higher than a like-for-like replacement. To mitigate the additional cost the Council will continued to bid for external funding to help pay for decarbonising heat in buildings.

The decarbonisation studies of a number of buildings commissioned by the Council have identified the best ways to decarbonise heating and have quantified the estimated cost and carbon savings. This has helped to prioritise a pipeline of sites to be decarbonised, where heating systems are coming to the end of their operational life and are due to be upgraded as part of the planned maintenance programme. This presents a once in a 15-20 year opportunity to cut site operational carbon by 60-70%. Appendix 2 lists the priority sites to be taken forward over the next couple of years. To date, the Council has completed the decarbonisation of heat at Ninfield primary school and is progressing with Herstmonceux primary school, which have

both provided significant learning that will inform the development and delivery of the next phase of heat decarbonisation schemes. A further pipeline of decarbonisation of heat projects will be developed for delivery beyond March 2025. The number of schemes delivered will depend on the amount of external funding that can be secured to contribute to the high capital cost.

Currently, there are no widely recognised metrics to assess value for money for heat decarbonisation projects. In the absence of nationally agreed metrics the Council has selected decarbonisation schemes on the basis that they both reduce site operational energy bills and meet a lifetime carbon cost of £2,000/tCO2e or less, which compares favourably with other carbon reduction schemes (see below).

Low Energy Lighting

The Council has converted all of its street lighting to low energy LED lighting, which has saved an estimated 600 tonnes of CO_2e per year. The Council has also had a programme to install low energy lighting in buildings since 2012 and approximately 30% of sites have had lighting upgrades, most of which are schools. The Council will install low energy lighting into a further 30 sites up to March 2025 using local contractors, which will take the total number of sites that will have had lighting upgrades to approximately 40%. The sites are selected on the basis that they meet the payback and lifetime carbon cost criteria set out below:

- Payback   – 25 years or less
- Lifetime Carbon cost   - £4,000/ tCO2e or less

Appendix 2 sets out the prioritised list of schemes that the Council has identified so far for delivery up to March 2025. This list includes a few exceptions to the criteria set out above, for instance in small schools where the operational hours are relatively short and so the payback periods can be longer than 25 years, but where the schemes are still deemed to be worth the investment. These criteria will be kept under review in light of the effect of inflation and supply chain issues on costs.

Solar PV

Installing solar PV reduces carbon emissions, reduces demand from, and dependence on, the national electricity grid and reduces energy costs, particularly on sites which can use all of the electricity generated. Solar PV can either be ground-mounted or roof-mounted. However, the carbon benefits of solar PV decrease over time because electricity from the national grid will gradually continue to become less carbon-intensive as renewables and nuclear replace coal and gas.

In 2015 the Council reviewed the opportunity to develop large scale ground-mounted solar PV schemes, notably on closed landfill sites. No sites were developed, primarily because the cost of connecting to the electricity grid was prohibitive. These schemes have recently been reviewed to identify whether new opportunities have arisen. The review has identified that the company that manages the electricity network in East Sussex, UK Power Networks, will no longer accept the connection of

new sites that generate more than 1MW of power until after 2029, because of constraints with the national electricity grid. The Council will continue to explore potential options that address these barriers, for instance battery storage and private wire.

The Council has so far installed solar PV at 57 sites (22% of all sites, including schools and non-schools). It will install schemes on a further 10 sites per year up to 2024-25, which will take the total to 34% of current sites. Further work is being carried out to develop the on-going pipeline of projects, to check key issues such as roof integrity and financial viability. The schemes will be selected using the same payback and lifetime carbon cost criteria as set out above for low energy lighting, with 25 years being the payback criterion because this is generally accepted to be the lifetime of solar PV panels. A few sites that do not meet these criteria will be taken forward where they meet other objectives, such as making it easier to decarbonise heating at a later stage by reducing the demand for grid electricity. Appendix 2 sets out the current list of schemes that the Council will develop, which will be expanded to 30 sites following appropriate site assessments. Most of these sites will also include battery storage.

The key challenge to implementation is with constraints in the supply chain for solar PV.

New Build

The Council first developed a Sustainable Buildings Policy in 2008, which was updated in 2016. The policy sets out the Council's aspirations in respect of sustainable buildings. The implementation of the Policy has historically been subject to a traditional cost benefit analysis and has been focussed on major capital projects such as Hailsham Community College.

The Council will review and update the Sustainable Building Policy to reflect its commitment to net zero and changes to the government's National Planning Policy Framework and the Building Regulations.

Travel

There are 3 aspects to Council travel:
1) The Council's own fleet, which generated an estimated 250 tonnes of CO2e in 2021-22.
2) Travel by staff and Members for business purposes in their own vehicles, which contributed approximately 685 tonnes of CO2e in 2021-22.
3) Commuting by staff and Members to and from work, which was estimated to have generated roughly 1,360 tonnes of CO2e in 2021-22.

There are three main ways to decarbonise transport, namely:
1. Avoid the need to travel by, for instance, enabling home working.
2. Shift journeys to those that generate no or very little carbon including walking, cycling and public transport.

3. Improve the carbon efficiency of transport networks and vehicles where journeys are necessary, for instance through car sharing and by using electric vehicles.

The Council developed its first travel plan in 2001. The recent significant change in work and travel patterns brought about by Covid mean that there's a need to develop a new staff travel plan. This includes the following actions:

- Own fleet: smaller fleet vehicles are to be replaced with electric alternatives when the current leases expire, where suitable alternatives are available.

- Business and commuting travel:
  o A staff survey was carried out in autumn 2022 to provide an updated insight into new staff travel patterns and help inform the development of appropriate incentives for staff to decarbonise their travel.
  o The existing Council schemes to support low carbon travel will be maintained as part of the staff benefits package. These include loans for the purchase of bicycles and e-bikes and reduced cost travel on buses and trains, for instance through corporate membership of the Easit scheme (see: Welcome to easitNETWORK).
  o The lease car scheme will be reviewed to encourage staff to select low emission/zero emission vehicles.
  o Car mileage subsidy bandings will be reviewed to reduce unnecessary car journeys and to make the scheme more attractive to staff.
  o EV charge points will be installed at County Hall and other sites will be assessed for their suitability for charge points. Beneficiaries will include staff who have to travel significant mileage for work, staff who commute to work by car, nearby local residents who could charge overnight and at weekends, and visitors.

The available incentives will be publicised widely to staff and Members. Key challenges to delivery of the actions above include uncertainty over future travel patterns, the limited choice and high cost of EV vehicles, and post-pandemic supply chain constraints.

Procurement

The Council has adopted an Environmentally Sustainable Procurement Policy, which it has developed with its Orbis partners at Surrey County Council and Brighton & Hove City Council. It also has a number of work strands to address carbon emissions from its supply chain. These include:

- Learning from Surrey County Council's trial of a database that will enable suppliers to measure their baseline emissions, set a carbon reduction target and report on their progress in reducing emissions.

- Commissioning specialist consultancy support to assess the potential cost of decarbonising the supply chain, through engagement with a representative

sample of suppliers, and to recommend a targeted approach to different sectors that matches their ability to decarbonise.

- Offering free energy audits and match funded grants of up to £10,000 to support East Sussex-based small and medium sized businesses in its supply chain to cut their energy costs and carbon footprint.

- Recruiting additional staff to lead on reducing carbon emissions from the supply chain.

- Working through the contracts that contribute 90% of the Council's supply chain carbon emissions, when these are being re-procured, to embed requirements for suppliers to measure their carbon emissions, commit to carbon reduction targets and to report on their progress. The contracts that are scheduled to be procured up to March 2025 include construction, a range of physical and mental health services, facilities management, catering and bus services.

Collectively, these actions will improve our understanding of carbon emissions from Council procurement and drive carbon reduction through key parts of the supply chain.

Waste and Water

Waste from schools and non-schools sites were estimated to have contributed about 55 tonnes of CO_2e to the Council's carbon footprint in 2021-22. This is about double the figure from waste in 2020-21 but less than half the figure of 2019-20, which indicates the significant temporary effect that Covid had in reducing some of the Council's carbon emissions. In 2021-22 about 13% of waste was composted, which was mostly food waste, 68% was incinerated and 19% was recycled. The waste contractor is tasked with continuing to encourage schools in particular to reduce, reuse, recycle and compost waste, all of which tend to contribute to reducing carbon emissions. For example, in autumn 2022 the contractor will support the 10 schools with the lowest recycling rates to improve their performance, which may bring cost savings to the schools.

Water usage across the Council and in schools in 2021-22 contributed about 64 tonnes of CO_2e. Water efficiency measures, such as urinal controls and lower flush toilets, will continue to be installed as part of regular building maintenance work.

Communications, Engagement and Behaviour Change

A number of ways to cut the Council's carbon emissions rely on schools, staff and Members deciding to take up low carbon solutions, for instance in their travel choices and their use of energy in buildings. Some of these decisions depend on having the right supporting information, infrastructure and systems in place to empower and engage schools, staff and Members, including using their skills and ideas to identify further opportunities to cut carbon. The UK's Committee on Climate Change, which is the government's independent advisory body on how to get to net zero by 2050,

estimates that about 2/5ths of the change required to get to net zero in the UK requires individuals and organisations to make changes to what they buy and about 1/5th needs to come directly from behavioural change, such as changes to how we travel and what we choose to eat.

The Council has delivered communications on climate change for a number of years, including via long-established working relationships with schools. For example, over 60 schools have participated in Ashden 'Less CO_2' workshops and the Council has worked with the Youth Cabinet to develop a school energy auditing process that will be led by pupils.

The Council has developed a climate change communications plan, which includes rolling out carbon literacy training for staff and Members, launching a new e-learning module on climate change for staff, and running energy saving workshops for school site managers and business managers. The latest communications plan is set out in appendix 5 and will guide delivery of communications, engagement and behavioural change work up to March 2025. This will continue to be reviewed regularly, for example to include the communications work that is currently being developed by Children's Services in response to the government's climate change 'Strategy for the education and children's services systems', which was published in April 2022. These activities support staff to cut their carbon emissions at work and at home.

Offsetting

The modelling work summarised in section 7.2 makes it clear that the Council cannot meet its carbon reduction target of halving emissions between 2020-25 without increasing its investment in carbon reduction measures to a level that is currently beyond its means. Consequently, offsetting of some of the Council's carbon emissions will be required.

There are broadly 3 types of offsets:
1) large-scale off-site renewables, for instance via a power purchasing agreement.
2) land use sequestration, such as tree planting or changes to land management.
3) carbon removal technologies.

Off-site renewables are the most straightforward and measurable method and could deliver carbon reduction at scale. However, UK Power Networks will not accept the connection of new sites that generate more than 1MW of power until after 2029. This means that there is unlikely to be significant local off-site renewables coming on to the market between now and March 2025 for the Council to be able to purchase. However, the Council is exploring the opportunity for a power purchasing agreement, which would need to be based on new renewable energy schemes based in areas in the UK that do not face the same grid constraints.

Land use sequestration usually requires significant land, which the Council does not hold. In addition, there is scientific uncertainty about how to measure carbon

sequestered in most types of habitats and the market for voluntary natural capital carbon offsetting is still in its infancy, with few agreed standards and limited protection for buyers. The Council is exploring this market with partners across Kent and Essex as part of a project funded by the South-East Local Enterprise Partnership.

The third carbon offsetting option, namely carbon capture and storage technologies, are at a very early stage of development and there is insufficient evidence to provide a realistic estimate of their potential contribution at this stage.

The Council will develop an offset policy and plan to guide its purchase of carbon offsets.

Climate Change Adaptation

Even if global warming can be limited to 1.5^0C above pre-industrial levels significant additional investment is likely to be needed in measures to adapt to the effects of climate change that are already locked in due to past emissions of greenhouse gases. The main effects in East Sussex include increased flooding, droughts and heat waves. The greater the change in climate the more investment will be needed, whilst unmitigated global warming could result in catastrophic scenarios that outstrip our capacity to adapt. This is more likely to occur in countries that have fewer resources to pay for adaptation to climate change, which increases the risk of mass migration to temperate countries such as the UK.

Climate change adaptation refers to the adjustments that we need to make in response to actual and expected climate change, to ensure that the Council can continue to operate effectively even as the climate changes. These include engineered solutions such as flood defences and nature-based solutions such as sustainable urban drainage. The objective is to build resilience into the Council's estate, services and supply chain so that the Council can continue to deliver its services regardless of the difficulties extreme weather can present.

The actions that the Council will undertake up to March 2025 will be to:
1) Assess the Council's vulnerability to climate change.
2) Produce a climate risk register.
3) Develop a climate-adaptation/ resilience strategy and programme.
4) Embed climate adaptation into business-as-usual decision making and risk management.

To do this the Council will work together with partners, for example in the Sussex Resilience Forum, to identify and map climate change risks over time for our services, our estate, our supply chain and our communities.

A key challenge with adaptation is that the long timescales and the level of uncertainty involved tend to make it difficult to plan and to justify the required up-front costs.

Lobbying and Financing

The Council has lobbied government for additional and more flexible resources for climate change and will continue to do so, working with partners and existing networks where this may be more effective. The Council will also investigate other sources of finance to pay for the transition to net zero.

Summary Action Plan

Table 4 below provides a summary of the actions described above up to March 2025. The list is not exhaustive, as we are likely to find new projects over the next couple of years, and some projects that have been identified so far may be subject to change in response to circumstances beyond the control of the Council, such as supply chain issues or national grid constraints.

The estimated carbon saving from the identified actions are stated where possible. For some actions these figures will change. For example, we have not yet identified all 30 solar PV schemes to March 2025, therefore the estimated carbon figures shown in table 4 will increase as further schemes are added to the pipeline. For actions where it's not possible to quantify the carbon reduction, such as training programmes, the description of 'high', 'medium' or 'low' has been used to give an approximate indication as to the likely relative effectiveness of these actions in reducing carbon emissions.

Table 4. Action Plan Summary

Action	Description	Outputs			Carbon Reduction
		2022-23	2023-24	2024-25	
Corporate decision-making					
Organisational change	Develop and deliver a system to align relevant Council decisions with the commitment to net zero	Develop a process to support decision-makers.	Review Council policies, strategies and programmes.	Review the process and update the programme.	High
Buildings					
Decarbonisation of heat schemes	Decarbonise 7 sites (3% of the current total)	Deliver 2 schemes	Deliver 3 schemes	Deliver 3 schemes	190 tonnes of CO2e
Low energy lighting schemes	Install low energy lighting at 30 sites (taking the total to 40% of sites)	Deliver 10 schemes	Deliver 10 schemes	Deliver 10 schemes	100 tonnes CO2e
Solar PV schemes on buildings	Install solar PV at 30 sites (taking the total to 34% of sites).	Deliver 10 schemes	Deliver 10 schemes	Deliver 10 schemes	17 tonnes CO2e
Training & maintenance in place	Train site managers to commission and maintain energy systems	Training developed & delivered to 40 site managers	Training delivered to 40 site managers	Training reviewed & updated	Medium
New build and major refurbishment	Review, update and apply the Sustainable Buildings Policy	Review the policy	Update and apply the policy	Evaluate the policy	Medium
Hydrogen for heating	Understand and implement potential opportunities to use hydrogen	Monitor policy and infrastructure changes			n/a

Action	Description	Outputs			Carbon Reduction
Travel					
Own fleet	Replace smaller fleet vehicles with suitable electric alternatives	Review the leases & EV market	Dependent on the review & market	Dependent on the review & market	Low
Business travel & commuting	Review and revise the lease car scheme	Review the scheme & subsidy bandings	Dependent on the review	Dependent on the review	Low
	Install electric vehicle charge points	Install EV charge points at County Hall	Review other ESCC sites	Dependent on the review	Low
	Develop and implement an updated staff travel plan for staff & Members	Develop an updated staff travel plan	Implement the travel plan measures	Implement and evaluate the plan	Medium
Hydrogen for transport	Understand and implement potential opportunities to use hydrogen	Monitor policy and infrastructure changes			n/a
Street lighting					
Policies and technologies	Review dimming and part-night lighting policy and changes in technology	Review intelligent lighting systems	Review lighting policies	Dependent on reviews	Medium
Renewables					
Solar PV on land	Assess options for large scale solar PV on ESCC land	Revisit closed landfill sites options	Dependent on option review	Dependent on option review	High
Procurement					
Understand the cost of decarbonising the supply	Work with a specialist consultancy to engage with key suppliers	Complete specialist consultancy review	Dependent on the review	Dependent on the review	High

Action	Description	Outputs			Carbon Reduction
chain					
Improve the procurement carbon baseline	Gather more carbon data from suppliers to help set targets	Work with Surrey CC to trial data collection systems	Roll out data collection to ESCC suppliers	Continue roll out, and review data collection	n/a
Embed carbon reduction in new large contracts	Require carbon baseline, reduction targets and reporting	Embed carbon reduction and adaptation into the re-procurement of major contracts in waste, transport, care and construction.			High
Support small local suppliers to cut carbon	Deliver support scheme to small suppliers	Promote free energy audits and grants	Develop new support scheme	Deliver new support scheme	Medium
Waste and water					
Reduce, reuse, recycle, compost	Continue to extend recycling and composting facilities	Continue roll out of composting facilities	Embed into new Facilities contract	Continue roll out to more sites	Low
Reduce water usage	Improve water efficiency	Continue roll out of water efficiency measures through buildings maintenance			Low
Offsetting					
Offsetting policy and plan	Establish and implement a carbon offset policy and plan	Develop the policy and plan	Implement the policy and plan	Review the policy and plan	High
Off-site renewables	Explore a power purchasing agreement (PPA)	Review the PPA market	Dependent on the review	Dependent on the review	High
Land use carbon sequestration	Evaluate opportunities in East Sussex	Review Council land	Dependent on the review	Dependent on the review	Low
Engagement, behaviour change and communications					

Action	Description	Outputs			Carbon Reduction
Carbon literacy training for staff & Members	Offer carbon literacy training to all staff and Members	500 staff to complete training	500 staff to complete training	500 staff to complete training	Low
Schools engagement plan	Co-develop comms and engagement for schools with the Youth Cabinet	Develop the Plan	Deliver the Plan	Review the Plan	Low
Staff engagement	Deliver staff engagement sessions	'Town Hall' event	Follow up Town Hall event	Tbc	Low
Climate change adaptation					
Develop and implement an adaptation plan	Embed climate adaptation into business-as-usual decision making and risk management	Assess the Council's vulnerability to climate change.	Produce a climate risk register.	Develop a climate-adaptation plan.	n/a
Monitoring and reporting					
Quarterly progress	Report on outputs delivered	Quarterly reports to the Climate Emergency Board			n/a
Annual review & report	Report to Full Council	Report in October 2022, October 2023 and October 2024			n/a
Lobbying					
Lobby government	Lobby for additional resources for climate change, with partners where appropriate	Use government consultations and existing networks to lobby government for additional and more flexible funding and to make policy changes that support the Council's journey to net zero			n/a
Financing of Net Zero					
Review financing options	Identify and assess additional sources of finance	Research additional sources of finance	Assess the costs, risks & benefits	Tbc, dependent on the review	n/a

8. Governance

The Council has set up a robust structure of roles, responsibilities and accountability for delivering the Climate Emergency Plan. This includes:

1) a senior Officer Climate Emergency Board to provide oversight of delivery of the action plan, to remove barriers to change and to drive continuous improvement.
2) Annual reporting to Cabinet and full County on progress against the carbon budget and commitment to becoming carbon neutral.
3) a Scrutiny review of the Council's programme of work to address the climate emergency and a Scrutiny Place Committee working group review of this action plan.

9. Monitoring, Reporting and Review

The Council has a comprehensive system in place to collate and analyse data for scope 1, 2 and some scope 3 emissions. These are summarised in appendix 3. Carbon emissions data and delivery of the climate change programme outputs summarised in table 4 are tracked, and progress is reported quarterly to the Climate Emergency Board.

The key means of measuring progress will continue to be against the five year carbon budget for 2020-25 (see figure 7). Annual CO2e emissions data are collated, checked and analysed, following the process set out in appendix 3. In addition, progress in delivering all of the actions listed in the Action Plan in table 4 will be monitored, assessed and reported.

The action plan will be reviewed in 2023 by the Climate Emergency Board and adjusted in light of changing legislation, technology, levels of resources available and knowledge about new projects. A new Climate Emergency Plan will be developed in 2024 to continue from where this plan ends in March 2025. The new Action Plan will be based on an updated version of the model that has been used to inform this Action Plan and also on the lessons learned over the next couple of years and any relevant changes to legislation, policy, technology, resources and good practice.

10. A Net Zero County

As mentioned in the introduction, the Council's emissions are a relatively small percentage of the county's total emissions. This highlights that no single organisation, acting alone, has the powers or resources to secure the scale of change required at a county level to reach net zero. It requires shared responsibility for making change, strong leadership and strategic collaboration across multiple stakeholders, to pool resources in order to maximize the opportunities and benefits. For the Council, this includes staff, Members, schools, its suppliers and partners.

The Council also works with a number of partners across a range of areas to share resources, good practice and learning. This includes:

- Participating in the Local Government Association's Net Zero Innovation Programme;
- Sharing resources across the Orbis partnership with Surrey County Council and Brighton & Hove City Council on procurement;
- Working with all Sussex local authorities in the Sussex Nature Partnership and the Sussex Air Quality partnership, both of which are hosted by the Council;
- Developing a co-ordinated approach to EV charge points across the county with SPACES partners;
- Participating in the Hydrogen Sussex partnership;
- Meeting regularly with District and Borough Climate Change Officers;
- Exploring opportunities to align the Council's climate change work with that of community energy groups by working through the Community Energy Pathways Programme.

In addition, the Council works through a range of partnerships to lobby government, for instance ADEPT, which is the Association of Directors of Environment, Economy, Planning and Transport.

Whilst this action plan is about the Council's own carbon emissions it's important to note that the Council delivers a number of programmes and projects, often in partnership with others, that contribute to reducing carbon emissions across the county. These include:

- The fuel poverty programme, overseen by the East Sussex Energy Partnership, which has coordinated a programme worth over £10m since 2016 to provide energy advice and improvements to insulation and heating for thousands of fuel poor residents. In the last year the service has provided advice to around 10% of households in fuel poverty and delivered improvements to about 2% of households in fuel poverty.
- Investing over £20m since 2014 to deliver improvements to walking and cycling infrastructure.
- Securing over £40m to improve bus services in the county.
- Delivering approximately £500,000 of grants to local businesses since 2018 to implement energy efficiency measures, which cut their energy costs and carbon emissions.
- Supported over 250 households to install solar PV panels on their properties through the Sussex Solar Together programme.

11. Risks and Challenges

There are a number of risks and challenges to delivering this Action Plan. Some of these have been mentioned already, such as issues with the supply chain. Table 5 summarises the key risks and how the Council will manage them.

Table 5. Key Risks to delivering the climate emergency plan for 2023-25.

No.	Date raised	Risk [1]	Impact [2]	Risk assessment 1 = Low; 3 = High Impact x Likely = Result			Proposed or actual Countermeasure(s) [3]	Owner	Status open/ closed
				Impact	Likely	Result			
1	5/7/22	Carbon footprint increases through business-as-usual	Less likely to meet carbon reduction target	3	1	3	Build carbon reduction into business-as-usual (policies & practice)	Climate programme manager	Open
2	5/7/22	Electricity grid decarbonisation does not occur	Less likely to meet carbon reduction target	3	2	6	Identify robust pipeline of carbon reduction projects	Climate programme manager	Open
3	5/7/22	Statutory and/or national policy change (eg. ASC reform)	Less likely to meet carbon reduction target and/or may increase costs to ESCC	3	2	6	Model potential impacts early and develop mitigation options	Climate programme manager	Open
4	5/7/22	Reduction in ESCC resources, including staff	Less likely to meet carbon reduction target	3	1	3	Bid for external funding & review alternative financing options	Climate programme manager	Open
5	5/7/22	Climate emergency actions impact on service delivery	Reduced ability to deliver service needs	3	1	3	Understand effects on services & plan for minimal disruption	Climate programme manager	Open

6	5/7/22	Changes to technology (e.g. hydrogen for heating)	Investment made in stranded and/or more expensive assets	3	1	3	Procure tried and tested and/or hybrid technology	Climate programme manager	
7	5/7/22	Lack of skills and capacity in the supply chain	Less likely to meet carbon reduction target & higher maintenance costs	3	1	3	Engage with the supply chain early and work with Skills East Sussex	Climate programme manager	Open
8	5/7/22	Supplier costs increase due to supply chain issues.	Less likely to meet carbon reduction target & higher costs	3	2	6	Track market costs closely and lock in lower costs through procurement practices	Climate programme manager	Open
9	5/7/22	Covid 19 related restrictions that delay project delivery	Less likely to meet carbon reduction target	1	2	2	Build flexibility into delivery timeframes	Climate programme manager	Open
10	5/7/22	Offsetting opportunities are not available at scale	Less likely to meet carbon reduction target & higher costs	3	2	6	Engage with the offset market early & manage expectations	Climate programme manager	Open
11	5/7/22	Key stakeholders / staff are unwilling to play their part	Less likely to meet carbon reduction target & higher costs	2	1	2	Develop a robust comms plan with compelling narrative & incentives to act	Climate programme manager	Open
12	5/7/22	Adaptation measures become more urgent	Less likely to meet carbon reduction target & higher costs	3	1	3	Establish adaptation risks early	Climate programme manager	Open

Glossary

Acronym	
ASC	Adult Social Care
BAU	Business-as-usual
BSD	Business Services Department
CS	Children's Services
CET	Communities, Economy & Transport
GHG	Greenhouse gas
G&CS	Community Services
GWP	Greenhouse warming potential
CO2	Carbon dioxide
CO2e	Carbon dioxide equivalent
REGOs	Renewable Energy Guarantees Origin

Appendix 1 – Modelling report executive summary

**Carbon modelling and pathways tool**

Building on the decarbonisation assessment toolkit developed previously for East Sussex County Council (the council), we have produced an easy to use and flexible tool for assessing and projecting your organisational level carbon baseline and reduction pathways. The toolkit incorporates the following:

- Building by building decarbonisation strategies – drawn from or extrapolated from the 2021 decarbonisation strategy work and 20 LCSF Phase 2 Heat Plans from March 2022
- Additional carbon baselines and projections for other sources of scope 1 and 2 emissions including corporate fleet.
- Additional carbon baselines and projections for Scope 3 emissions based on analysis of council expenditure.
- Ability to add/remove assets from the baseline at a specific time and to adjust the carbon intensity over time based on external changes (e.g., carbon emission factor projections) and specific interventions that reduce energy consumption or switch to lower carbon sources of energy/activity.
- Dashboard functionality to assess, analyse and filter carbon emissions by source, scope and reduction scenario.
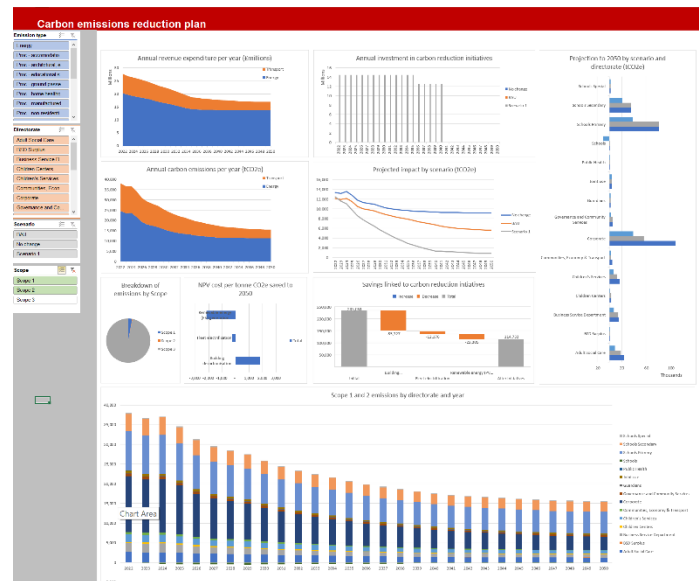
Included carbon emissions

This report and analysis cover the following sources of carbon emission:

- **Scope 1 emissions:** from fossil fuels used for heating schools and corporate buildings, together with the Council's vehicles.
- **Scope 2 emissions:** purchased electricity used in building and for street lighting.
- **Scope 3 emissions:** arising from all other Council activities including business travel, water usage, waste, procurement and staff commuting.

As is typical for a local authority, Scope 3 emissions dominate, as most of the Council's revenue and capital budgets are used to procure goods, services and works from third parties. Scope 3 emissions mostly comprise the Scope 1 and 2 emissions of other organisations (e.g., contractors). Carbon reduction strategies prioritise Scope 1.

Summary of key findings

The following key conclusions can be drawn from this analysis of the council's carbon emissions in 2020-21 and of the options available to achieve the 13%YoY reduction target:

- Council emissions are dominated by the Scope 3 impact of its supply chain. Engagement with key suppliers to develop strategies for reducing these emissions must be a critical component of the council's strategy.
- Current Scope 1&2 emission were in the order of 10,700 tCO2e in 2020-21 this is lower than the previous year and is depressed by the COVID-19 pandemic. In 2021-22 it would be expected that energy use will be higher than in 2021-21 making it more difficult for the council to remain on its 13% YoY reduction target.

Decarbonisation of the electricity grid presents a significant opportunity for the council to reduce its Scope 2 and overall emissions, Scope 2 emissions can be further reduced by arranging a PPA for a portion of the council's energy use.

Renewable energy generation in the form of roof or ground mounted PV is a cost-effective means of reducing carbon emissions and unlike building decarbonisation provides the council with a positive rate of return, in the order of 6%. However, the council's capacity to install the necessary volume of PV is constrained by two factors the speed of deploying roof top PV and a limitation on the capacity of electricity grid to receive power from ground mounted PV arrays of above 1MW.

Building decarbonisation is an expensive but essential component of the council's strategy and the ability of the council to remain on its emission reduction target after mid 2020's is closely linked to the level of investment in building decarbonisation. The Target Focus (TF) scenario requires investment of c.£20million per year in building decarbonisation between 2023 and 2035.

Lower levels of building decarbonisation result in the council falling significantly short of its reduction targets with the currently approved budget of £3million per year between 2022-2024 only delivering an annual carbon saving of c.150 tCO2e.

Currently available funding from central government via the Public Sector Decarbonisation Fund provides a means to gain additional investment into building decarbonisation and thereby reduce the cost to the council and accelerate this critical component of the council's decarbonisation journey. Every effort should therefore be made to support the production of high quality and well targeted applications to this fund.
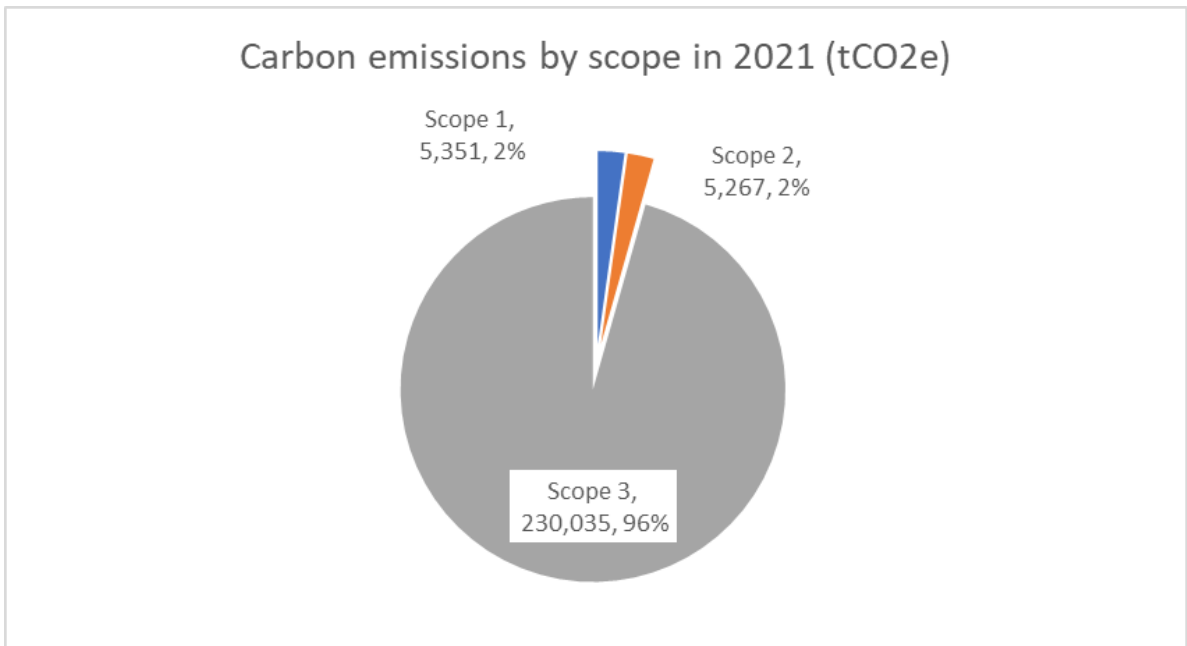
Current carbon emissions

The council's carbon emissions are dominated by Scope 3 emissions linked to procurement of services such as waste management, transportation, and nursing care. Only around 4% of emissions are currently directly linked to council activities such as energy use in buildings and fleet. Figure E.1 provides a breakdown of the over 240kt of CO_2e emitted in 2020-21 by scope[1].

Scope 3 emissions mostly comprise the Scope 1 and 2 emissions of other organisations (e.g., contractors) and are a best estimate of the likely scale of emissions since it is not practical to collect robust direct data from every contract and transaction. The modelling tool has enabled an enhanced best estimate by using proxy values aligned with the type of expenditure, to combine Scope 3 emissions where robust directly reported data is readily available, to give a total estimated value.
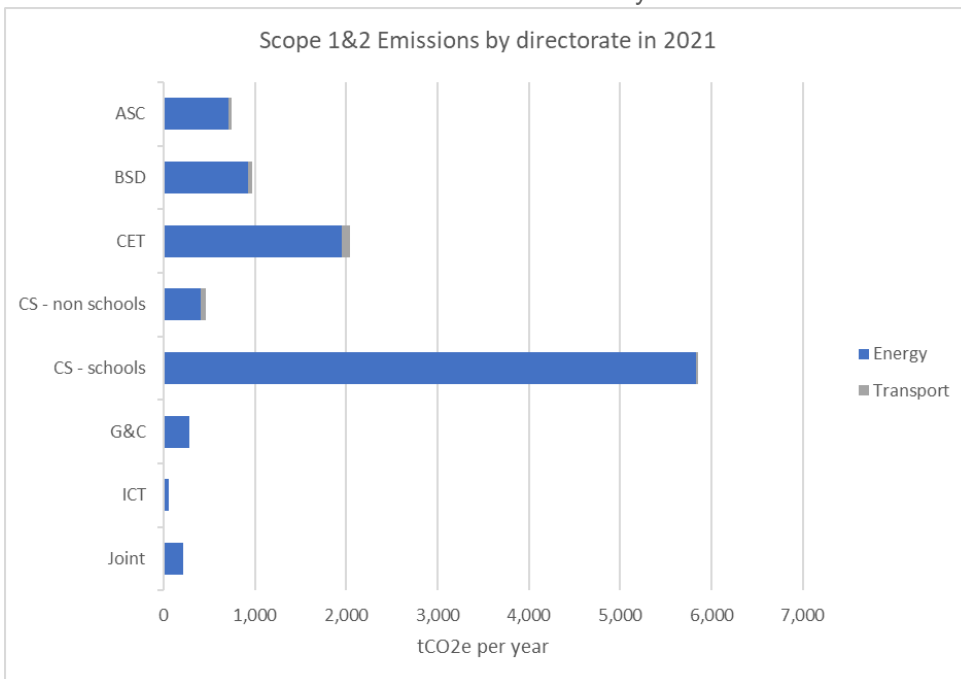
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[1] Note emissions from energy consumption are net of 167tCO_2e saved by energy generated on the council's buildings.

Figure E.1: Carbon emissions by Scope in 2020-21 (tCO$_2$e)

Excluding Scope 3 emissions, which are currently not allocated to directorates, 10.79 kt CO$_2$e was emitted in 2020-21. These are broken down by council Directorate as shown in Figure E.2.

Figure E.2: Scope 1 and 2 carbon emissions by directorate in 2020-21

Potential emission reduction scenarios

Future carbon emissions associated with council activities (Scope 1 & 2) are projected through to 2050 for 5 alternate scenarios:

1. **Business as usual** (BAU) – this scenario includes for anticipated external changes that will influence the council's emissions principally decarbonisation of grid electricity, progressive switch over to electric vehicles and the completion of like for like works to council buildings which do not prioritise decarbonisation.

2. **Current budget** (CB) – this scenario includes existing allocated budget of c.£3 million per year between 2022 and 2025 to invest in measures to reduce carbon emissions in addition to the background changes included within BAU.
3. **Extended current budget** (ECB) – this scenario considers the carbon impacts of extending the agreed £3 million per year budget through to 2050.
4. **Target focus** (TF) – this scenario builds on the CB scenario but also includes additional decarbonisation measures after 2025 to the extent necessary to deliver the council's 13% YoY reduction strategy with minimal or no use of offsetting.
5. **Academisation** (Acad) – this scenario considers the impact of all the council's schools becoming academies after 2030.

The decarbonisation assessment toolkit enables council officers to add additional decarbonisation measures to any scenario to add further depth to the council's strategy.

Figure E.3 shows the council's projected Scope 1&2 carbon emissions under the BAU scenario to 2050. Scope 1&2 emissions in 2019-20 are dominated by gas and electricity consumption. However, this changes markedly from 2025 onwards as the relative impact of grid electricity consumption diminishes rapidly so that by 2050 it comprises only around 2.5% of the total (see Figure E.3).
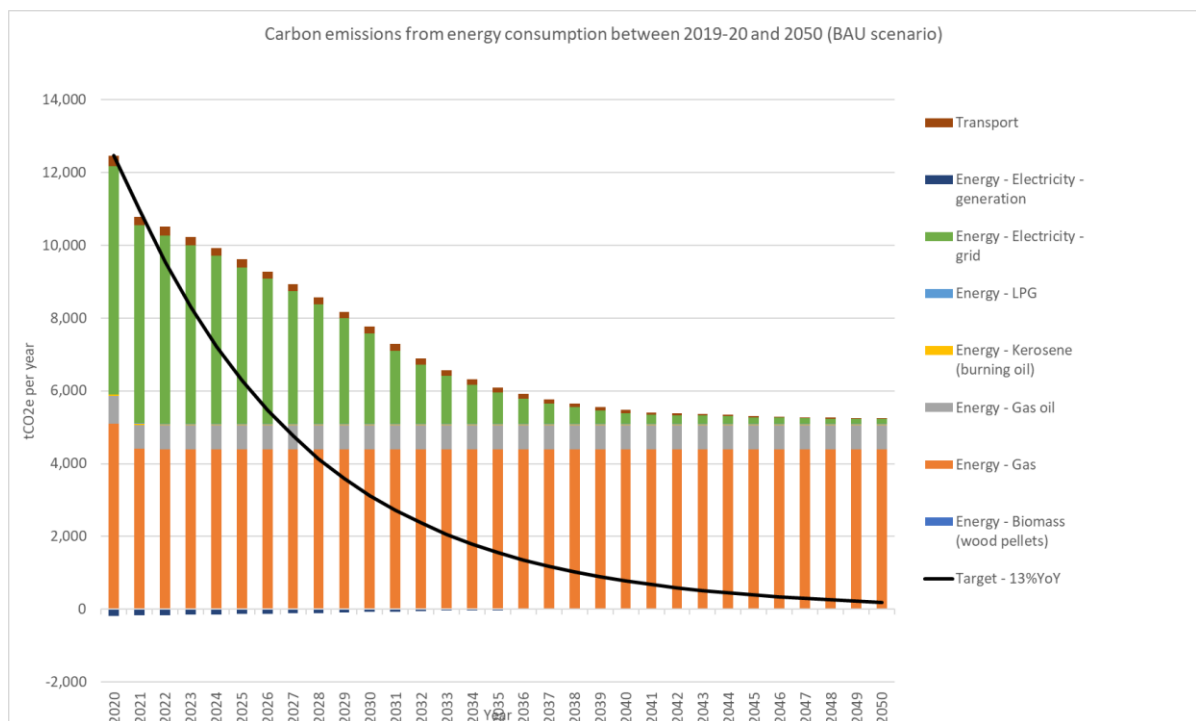
**Figure E.3 Scope 1&2 emissions by emission source between 2021-50 (tCO$_2$e)**

Despite the impact of significant electricity decarbonisation, the council's ongoing consumption of gas, kerosene, gas oil and transport fuels results in emissions only declining by around 40% by 2050, far short of the council's 13% YoY target. The BAU scenario would result in annual emissions in 2050 being over 5kt CO$_2$e higher than the council's target.

Figure E.4 shows the projected carbon emissions to 2050 for the council's Scope 1 and 2 emissions under each scenario. It is important to note that under the Academisation Scenario, these emissions are not falling in practice, they remain within the County even though they are no longer included in the council's carbon account.
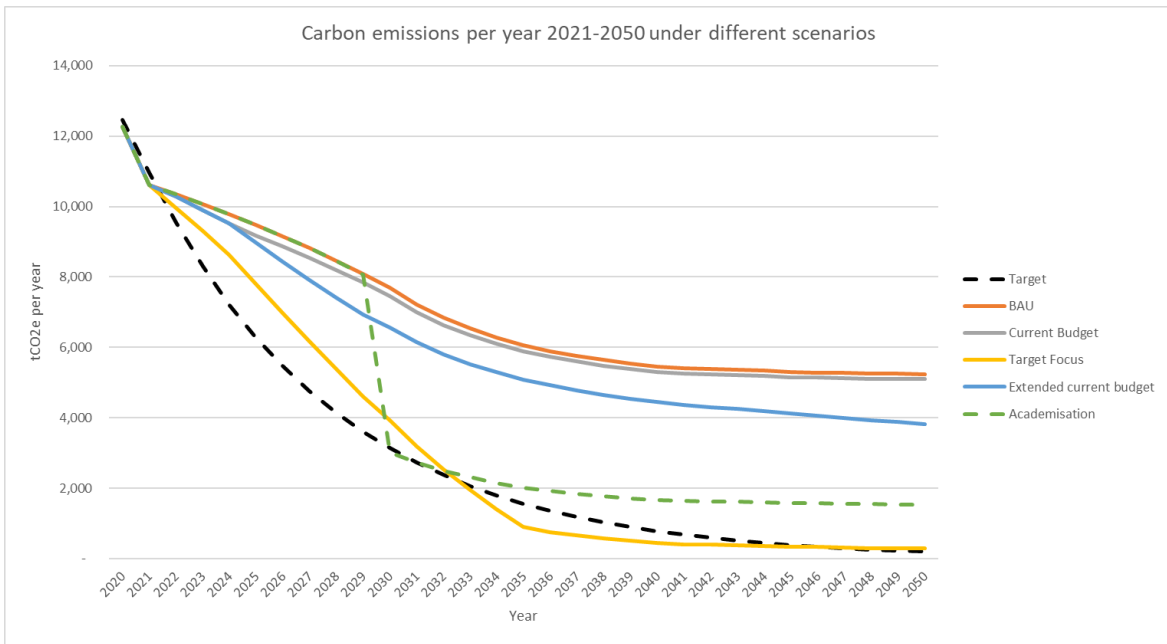
Figure E.4: Carbon emissions to 2050 for each scenario

Figure E.5 shows the implications of using a power purchase agreement (PPA) to reduce the Scope 2 emissions linked to electricity consumption.
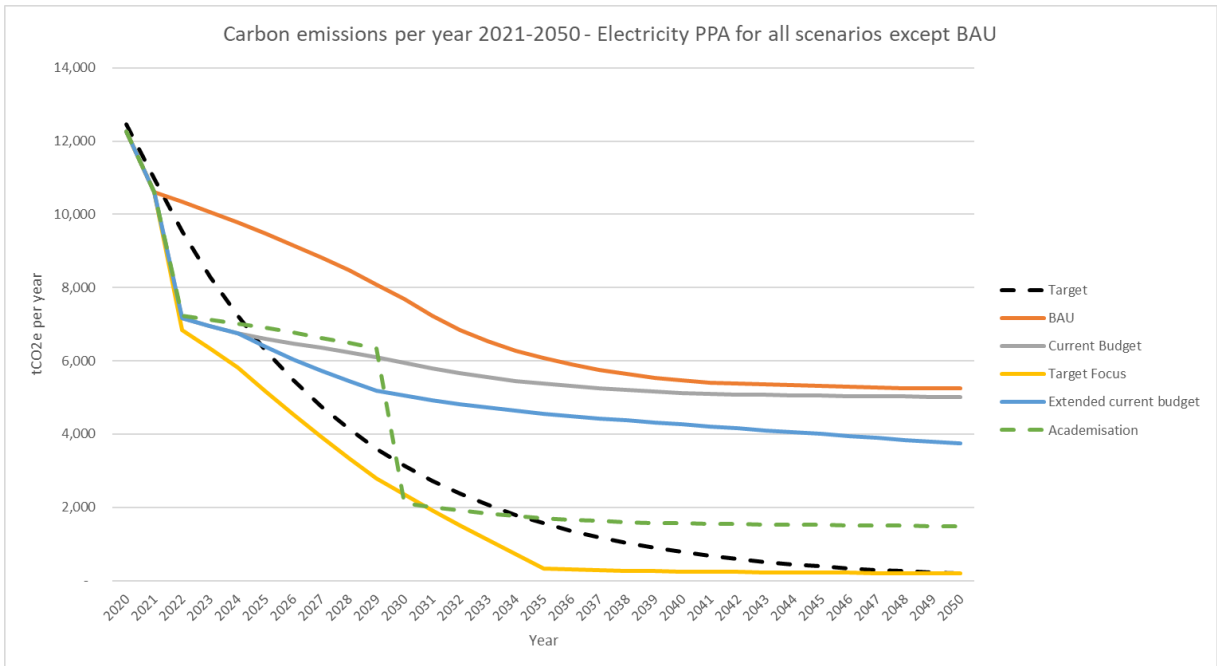
Figure E.5 Carbon reductions over time by scenario with a PPA for electricity consumption

None of the carbon reduction scenarios are able to stay on the council's reduction strategy without the use of a power purchase agreement to reduce emissions linked to electricity consumption. This is because of limitations in the speed and extent of both renewable energy generation and building decarbonisation and for the CB and ECB scenarios on budget constraints. When combined with a PPA it is possible for the council to remain on (or even out perform) its YoY target until the mid 2020's, however the potential further savings from PPA or

renewable energy generation are limited and it is necessary to invest significantly in building decarbonisation to remain on target.

Investment under the CB and ECB scenarios is limited to c.£3million per year, whereas the TF scenario involves investments of around £20million per year between 2022 and 2035.

Figure E.6 shows the cumulative discounted cashflow (combined investment costs and utility costs) for each scenario through to 2050 net of the BAU scenario. This shows the scale of additional net investment that the council would need to fund to deliver on its climate reduction target.
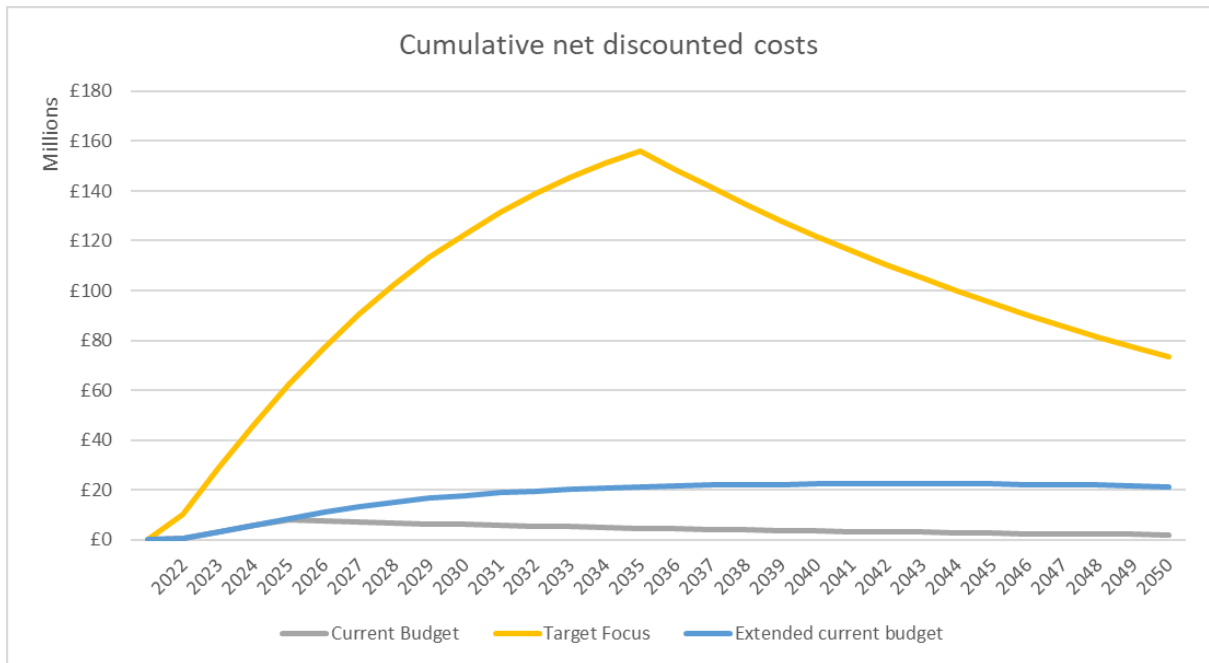

Figure E.6 Cumulative net discounted costs over time under each scenario

Addressing Scope 3 emissions

Figure E.7 shows the council's scope 3 emissions in 2020-21[2]. These make up c.96% of the council's carbon footprint so it is important that initiatives to address these impacts through procurement and other measures are given due attention. Close attention to the procurement of waste and transportation contracts could prove to be the single largest opportunities to reduce the council's footprint. Measures could include requiring the accelerated adoption of EVs by transport providers and inclusion of estates, operations and fleet decarbonisation clauses within appointments for council funded care providers.
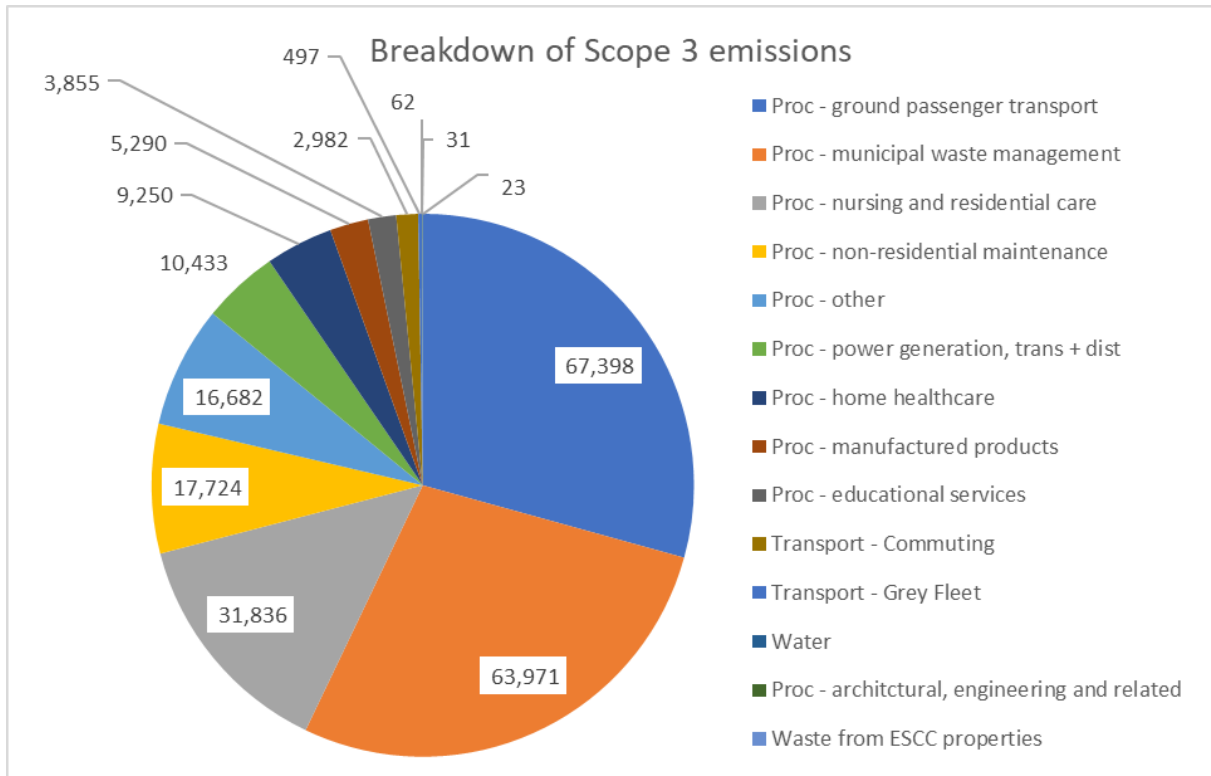

Figure E.7: Breakdown of Scope 3 emissions in 2020-21 (tCO$_2$e)

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[2] Emissions linked to Education Services relate to additional expenditure on educational activities including agency workers, school trips and other support.

Appendix 2 – Detailed list of decarbonisation schemes

Heat decarbonisation schemes

Site	Heating fuel	Cost (£)	Possible grant (£)	ESCC match (£)	£/LTtCO2e	Annual energy bill savings (£)
Chiddingly school	Oil	£709,981	£266,862	£380,227	£600	£500
Plumpton school	Oil	£841,582	£122,188	£601,680	£1,600	£700
Bodiam school	Oil	£562,115	£234,341	£252,011	£600	£850
Hellingly school	Gas	£813,994	£114,702	£626,725	£1,800	£11,000
Rocks Park school	Gas	£951,881	£275,673	£567,789	£700	£5,250
Rotherfield school	Gas	£899,552	£281,831	£463,169	£800	£5,500
TOTAL		**£4,779,105**	**£1,295,597**	**£2,891,601**	**£1,017 (average)**	**£23,800**

Low energy lighting schemes

Site	Total Project Cost (£)	kWh savings	Annual Bill Saving (£)	Payback (years)	Year 1 CO2 Saving (tCO2)	Lifetime Carbon Saving (tCO2eLT)	Carbon Cost (£/tCO2eLT)
Wadhurst PS	33785	6750	1728	19	2	9	3842
Netherfield CE Primary School	170662	6415	1656	18	1	8	3606
Polegate School	54527	6771	1681	28	2	9	5537
Hellingly Community Primary School	128227	10757	2844	13	2	14	2808
Fletching CE Primary School	47507	5740	1521	9	1	7	1940
Chailey (St Peters) CofE Primary School	85374	8065	1925	18	2	10	3434
Southover Primary School	130049	24879	6202	14	6	31	2697
Dallington CE Primary (VC)	69913	8048	2073	12	2	10	2402
Laughton Primary School	13336	6274	1635	8	1	8	1687
Little Horsted PS (VA - £10k DoC cont.)	18624	8305	2144	9	2	10	1780
Hankham Primary School	65536	9176	2417	14	2	12	3015
Milton Grange	154111	73323	12815	12	17	92	1601
St Mary's House	323654	178421	33047	9	41	225	1382
Maynards Green C Primary School	104251	13123	3417	12	3	17	2547
Iford and Kingston CE Primary School	53951	3509	913	20	1	4	4112
Catsfield Primary School	70177	19363	4653	8	4	24	1445
Frant Primary School (est.)	71718	9846	2425	12	2	12	2371
Mayfield Primary School (est.)	86800	9846	2425	15	2	12	2869
West Rise Infant & Junior Schools (est.)	90242	9846	2425	15	2	12	2983
Totals:	**1,772,444**	**418,457**	**87,944**	**(average) 14**	**97**	**527**	**(average) 2,740**

Solar PV schemes

Site	Cost (£)	Annual Generation (kWh)	Site Consumption (kWh/year)	Annual Saving (£)	Year 1 Carbon Saving (tCO2e)	Lifetime Carbon Saving (tCO2e)	Payback (years)	£/tCO2e lifetime
Hollington Library	34713	8690	5600	839	1	5	41	6734
Hailsham East Children's Centre	102717	55880	52030	5438	6	34	19	3022
Bellbrook Centre	88306	54570	19750	2611	3	16	34	5504
Hampden Park Library	31404	9270	9480	1268	1	8	25	4030
Silverlands Centre	70603	40770	31410	4341	5	25	16	2813
Phoenix Centre	62778	40088						
The Keep	186214	113040	764250	18885			10	
Totals:	**576,735**	**322,308**	**882,520**	**33,383**	**16**	**88**	**(average) 24**	**22,104**

Appendix 3 – Carbon data management plan

	Scope	What is included	Data Source	Key exclusions & uncertainty	Date Available
Scope 1	Gas Consumption	All natural gas used in ESCC buildings or those which we occupy to which ESCC is the counter party to the energy bill, including schools, properties closed and sold in 2020-21 and our portion of shared use.	Based on metered gas bills that ESCC pays, including schools	Excludes schools that don't buy in to the energy supply service.	Billed mid-April, validation required May/June
	Gas Oil, Burning Oil and Propane Consumption	All gas oil, burning oil, propane and biomass used in ESCC buildings or those which we occupy to which ESCC is the counter party to the energy bill, including schools, properties closed and sold in 2020-21 and our portion of shared use.	Based on oil and propane that ESCC pays, including schools	Excludes schools that don't buy in to the energy supply service.	Billed mid-April, validation required May/June
	Owned Transport	All core fleet owned and operated by ESCC.	Based on fuel usage and vehicle type		Billed mid-April, validation required May/June
		Joint Use sites	Bills for site apportioned on % pay under the joint use agreement	Not metered based on % as per joint use agreement	June
	Process Emissions	Excluded as not applicable to ESCC activities.	N/A	N/A	N/A
	Fugitive Emissions	Excluded due to cost of data collection.	N/A	N/A	N/A
Scope 2	Purchased Electricity	All purchased electricity used in ESCC buildings or those which we occupy to which ESCC is the counter party to the energy bill, including schools, properties closed and sold in 2019-20 and our portion of shared use. Including street lighting and traffic signals.	Based on metered electricity bills that ESCC pays, including schools	Excludes schools that don't buy in to the energy supply service.	Billed mid-April, validation required May/June
		Streetlighting purchased electricity	Unmetered supply so usage is estimated by inventory and usage pattern		Billed mid-April, validation required May/June
		ICT Data Centre metered electricity consumption also included.	Metered kWh data from Surrey Data centre sub-metering on ESCC Servers	N/A	May
		On-site renewable generation	Metered KWh for around 50% of sites, the rest based on kWp estimated generation data using kWp	Around 50% is estimated based on kWp size of solar panel	June

Scope		What is included	Data Source	Key exclusions & uncertainty	Date Available
		Joint Use sites	Bills for site apportioned on % pay under th e joint use agreement	Not metered based on % as per joint use agreement	June
Scope 3	Transmission and Distribution	Transmission and distribution loss associated with all purchased electricity.	Losses associated with electricity purchased under scope 2	Excludes schools that don't buy in to the energy supply service.	Billed mid-April, validation required May/June
	Business Travel	All mileage claimed in private or leased vehicles, but excludes public transport and taxis, as below.	Based on the fuel type, distance travelled and engine size of private cars used for business travel	Excludes public transport, flights, cycling, taxis, rental cars and overnight accommodation.	May
	Employee Commuting	Based on distance from home to work, days worked per year, and ONS data on commuting by car in East Sussex and adjusted to reflect greater homeworking and reduced business travel during pandemic.	Based on distance from home to work, days worked per year, and ONS data on commuting by car in East Sussex	Excludes the use of public transport and school staff, simplifies days worked & uses average emission factor.	
	Waste Disposal	Waste tonnages for corporate buildings and schools.	Based on waste, recycling and composting tonnage figures x emissions factors	Excludes emissions from waste transport and sites that have not joined the contract	
	Water	Measured m3 water use in ESCC buildings.	Based on metered water usage	Excludes unmetered sites (12.5% of the 136 corporate sites)	Billed mid-April, validation required May/June
	Product in Use	Excluded due to cost of data collection.			
	Supply chain	See appendix 4			

Appendix 4 - How scope 3 emissions have been calculated

1. Overview

Scope 3 emissions relate to business emissions from assets not owned or directly controlled by the reporting organisation. In the Council's case, these range from water used in Council buildings to energy used in our supply chain. For many organisations, including the Council, the bulk of their emissions fall under scope 3.

The quality of data available across the Council's scope 3 sources varies significantly. We have high confidence in the data for some activities, such as water used in our buildings and some large contracts where emissions are reported as a contractual obligation. However, accurate data are not currently available from the majority of contracts and from areas such as commuting. Consequently, most emissions are estimated using proxy values.

Calculating ESCC's scope 3 emissions therefore involves bringing together high and low confidence data. In common with other local authorities, our intention is to improve data quality in coming years, for example by requiring major suppliers to report on their emissions. As the data is subject to continual improvement, scope 3 emissions should not be compared directly between reporting years.

2. 2021/22 Scope 3 Emissions

Estimates for the Council's scope 3 emissions for 2021/22 are shown in **Error! Reference source not found.**, with supply chain emissions (excluding contracts with directly reported emissions) shown in

3. Calculation Methodology for Scope 3 Emissions

3.1. High Confidence Data

- **Water and Wastewater in Council Buildings**. Our property team manage water bills and collate data for all metered sites. Of the 136 corporate water supplies that are billed, 17 are unmetered (12.5%) and are excluded from the data. A BEIS emission factor[Error! Bookmark not defined.] is then applied to water supply and wastewater. Note that this emission factor was reduced in 2022 to reflect decarbonisation of grid electricity used in the water industry, and the Council's emissions from water are therefore significantly lower than in previous years.

Table 2. Note that these figures are provisional and may be subject to change as we improve the quality of data collected. What tables 1 and 2 highlight is that procurement is by far the largest part of the Council's carbon footprint.

Table 1: ESCC 2021/22 Scope 3 Emissions Summary

Emissions source	2021/22 emissions CO2e (tonnes)
Electricity Transmission and Distribution	430
Business Travel	686
Waste Disposal from ESCC Sites	55
Water/Sewage	64
Employee Commuting	1,360
Contract: Waste Disposal	58,158
Contract: Highways (scope 1 & 2)	422
Rest of Supply Chain	151,644
Total	**212,819**

4. Calculation Methodology for Scope 3 Emissions

4.1. High Confidence Data

- **Water and Wastewater in Council Buildings**. Our property team manage water bills and collate data for all metered sites. Of the 136 corporate water supplies that are billed, 17 are unmetered (12.5%) and are excluded from the data. A BEIS emission factor[Error! Bookmark not defined.] is then applied to water supply and wastewater. Note that this emission factor was reduced in 2022 to reflect decarbonisation of grid electricity used in the water industry, and the Council's emissions from water are therefore significantly lower than in previous years.

Table 2: ESCC 2021/22 Supply Chain Emission Estimates (excluding contracts with directly reported emissions)

Emissions source	2021/22 emissions CO2e (tonnes)
Ground passenger transport	67,398
Nursing and residential care	31,836
Non-residential maintenance	17,302
Other	16,682
Home healthcare	9,250
Manufactured products	5,290
Educational services	3,855
Architectural, engineering and related	31
Total	**151,644**

- **Business Travel (Grey Fleet).** This category relates to business travel, excluding Council owned or managed vehicles (which are reported under scope 1). It includes all mileage claimed in private or leased vehicles but excludes public transport and taxis. From the 2021-22 reporting year, car hire is included. The calculation is based on BEIS emission factors[Error! Bookmark not defined.] for the fuel type and engine size of the vehicle, applied to the distance travelled.

- **Electricity Transmission and Distribution Losses.** Losses related to electricity consumption reported in scope 2 are reported under scope 3. Standard emissions factors[Error! Bookmark not defined.] are applied to all electricity purchased (this excludes schools that do not buy in to the Council's energy supply service).

- **Waste Disposal from Council Sites**. Tonnages for total waste collected and individual disposal routes (e.g. landfill, incineration, recycling, composting) are provided by our contractor, Veolia. BEIS emissions factors[3] are then applied to these figures to calculate total emissions.

- **Highways Contract**. The highways contract is one of the Council's largest by value. Emissions related to the use of fuels, power, etc under the contract are directly reported by the current contractor, Costain.

- **Municipal Solid Waste Disposal Contract**. Emissions related to the disposal of municipal solid waste are the largest single component of the Council's scope 3 emissions. Inputs into contracted facilities are provided by the contractor, Veoila, and apportioned between the joint contractees (ESCC and Brighton & Hove City Council) by contract value. Emission factors are applied to these tonnages[Error! Bookmark not defined.] to calculate overall emissions.

4.2. Low Confidence Data

- **Employee Commute**. An estimate of employee commuting emissions was produced in 2020, based on home to work distances, days worked per year, ONS data on commuting by car in East Sussex[4] and BEIS figures for emissions from an average car[Error! Bookmark not defined.]. Emissions in 2021/22 were affected by pandemic related working from home, which fluctuated over the course of the year. We have therefore applied the same reduction seen in business mileage claimed to the employee commute emissions figure (and updated the average vehicle emission factor). A travel survey scheduled for late 2022 should enable us to better understand new working locations and produce a higher confidence estimate.

- **Supply Chain.** The Council currently has over 300 active contracts and purchases a large volume of goods and services through one off purchase

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[3] Greenhouse gas reporting: conversion factors 2021 - GOV.UK (www.gov.uk)
[4] Mode of travel - GOV.UK (www.gov.uk)

orders[5]. Three large contracts report their emissions to us directly (covered under high confidence data, see **Error! Reference source not found.**), but emissions are estimated for the large bulk of contracts. For 2021/22, the Council contracted the consultancy Currie & Brown to produce a new estimate of supply chain emissions using the monetary value of the contract and activity-specific emission factors. The Council will continue to use this approach in-house. We also aim to require an increasing number of larger contractors to directly report their emissions as a contract condition, as contracts are re-procured.

4.3. Missing Data

- **Employees Working From Home.** Employees spending significant amounts of time working from home is likely to be a lasting side-effect of the pandemic. Additional emissions from heating, IT and lighting in employees' homes as a result of their home working (over and above their domestic use) form part of ESCC's scope 3 emissions. Currently, the Greenhouse Gas Protocol does not include a methodology for estimating these emissions and we lack the data to enable this to be calculated. Once the Protocol includes a methodology and we have the data available we will aim to include this information.

Appendix 5 – Draft Climate Change Communications and Engagement Plan

ESCC's Climate Change Communications Strategy: Corporate emissions

In 2019, East Sussex County Council declared a climate emergency and set a target of achieving net zero from our activities as soon as possible and in any event by 2050.

This Corporate Climate Change Communications plan sets out a strategy for corporate communications on climate change, relating to its own buildings, activities and the goods, works and services it buys.

Our aims for corporate communications and engagement are:

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[5] See here [Local Government Transparency Code for Contracts and Purchase Orders over £5k | East Sussex County Council](#)

1. To raise awareness about climate change and net zero with staff and Members across the organisation and help them understand why there is a climate emergency, how ESCC's operations impact on climate change, and how they can reduce their impact on climate change in their work and in their daily lives.
2. To involve staff, Members, partners and service users in net zero plans. All staff members impact on climate change, and we are all part of the solution.
3. To demonstrate how ESCC is taking action on climate change and progress towards targets.

Corporate Climate Change Communications Plan

Aims	Outcome	Activities	Indicators	Audiences
Raising awareness	Staff awareness has been raised and staff have developed action plans to reduce emissions	**Training** • Create and launch 45-minute e-module for staff on climate change. • Further roll-out of 3-hour climate awareness workshops on line. • Pilot support sessions for staff for developing action plans after awareness training. • Promote opportunities for all climate emergency training through comms channels. • Carbon literacy training to be made mandatory for all new staff, subject to HRMB approval. **Comms** • Directorate environment champions scheme to launch (tbc). • Set up new climate yammer group. • Regular content to be shared to keep staff and Members engaged. • Spotlight specifically local impacts of climate change and celebrate stories of local positive action. • Seed climate change news and conversations through Yammer and other internal channels. Maintain content calendar of key dates. • Create an online newsletter for staff and public (tbc). • Comms via media, social media and *Your East Sussex* website.	• No. people undertaken e-learning and workshop. • No. staff developed action plans. • No. people attending action plan support sessions. • No. directorate champions. • Increased awareness levels (feedback forms)	All staff + Members

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	Web content is up to date, is easy to find and informative.	- Review information architecture and set new structure for web content. - Web team undertaking analytics for existing webpages. - New content to be developed for website and intranet. - Dashboard to be created showing where we are on carbon targets. - Lists of schemes that people can access locally to be on webpage.	Increased web traffic for climate change webpages.	Staff, Members and public
	Members are up to date and can communicate effectively about CC with constituents	Members can find up to date information on the ESCC website about support available for residents and businesses to address climate change so that they can share this with the public.		Members and public
Engage staff from across the organisation	Staff ideas, energy and personal contributions have shaped ESCC's climate actions	- Town Hall event on 9 November 2022 – all staff invited. Aims are to: engage staff, raise awareness about targets and action plan, and brainstorm best ways for them to get involved. This should influence subsequent comms and engagement output. - Recognise variety of positions – some will want to move faster, others will not be interested. - brainstorm how to reach the less engaged. - Share aggregate updates about personal action plans from staff training. - Display team and individual contributions to reducing CO2 output. Share ideas.	No. attendees at town hall event. No. plans shared online.	Staff, Members
	Emphasise	Focus on decarbonising strategy and delivery plans. (e.g. East Sussex environment strategy, electric vehicle charging, travel offers, electricity purchasing,		Public,

	and celebrate collaboration with partners	crowdfunding for community projects). • Embed simple, clear lists of available schemes, help and resources in our new climate change web pages. • Publicise grants, offers and crowdfunders through media, social media and newsletters (external and internal). • Use existing professional contact networks (including schools, businesses, suppliers) to share relevant ESCC policy updates (e.g. procurement policy).		Members, staff, partners
Demonstrate ESCC's approach and progress towards targets	Simple, regular and public reporting on our action to meet carbon reduction targets	• Develop and maintain a dashboard online to show progress against carbon budget. • Regular media, social media and internal communications coverage of ESCC projects (including schools) • Narrative and commentary pieces on progress (e.g. lead member video clips, occasional newsletters) • Bullet list of points agreed internally which can be used in emails to members of the public / staff / comments on press releases e.g. progress towards targets. • Transparency about both the figures and our challenges. • clearly differentiate between scope 1, 2 and 3 emissions in our communications.		Public, Members, staff, partners.

Branding

All ESCC comms around climate change should use the visual brand developed for this purpose 'Action on Climate Change. Our County. Our Future'

This visual identity was devised in consultation with staff, Members and representatives of the youth cabinet.

It offers a variety of formats including email newsletter headers, web banners and square images for social media use.
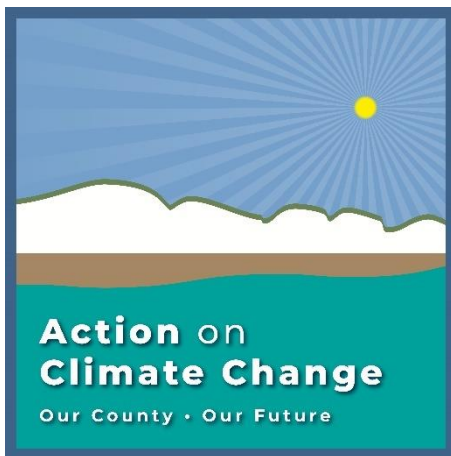
Where we're sharing campaigns with other partners, especially boroughs and districts, we have agreed that each will be free to apply their own branding to campaigns to tie into their mainstream activity. We will not seek to create a unified climate change brand for East Sussex, recognising different political priorities and approaches to the issue.

Evaluation

It will be important to measure not only the take-up of individual campaigns or stories but also to develop ways of measuring the depth and growth of engagement with staff, Members and the public.

These could include:

- Annual sample surveys to gauge knowledge and attitude.
- Take-up of carbon literacy training and/or offers (staff/Members).
- Community applications for Crowdfunder projects or other green grants.
- Numbers of businesses taking up climate change support.

Communications and engagement risks

- Members are not given clear explanations about climate change
- People do not understand communications due to jargon / are put off by technical language and concepts.
- Sustained criticism of ESCC in periods when climate targets are not met
- Failure to keep Members and staff engaged with progress
- Impatience from staff who want to move faster
- ESCC is blamed for issues outside its control
- Failure to build communication and engagement frameworks beyond the short term (especially meaningful data and evaluation)
- Possibility that climate change communication from within ESCC is fragmented and not coherent.