

University of Sussex  
Carbon Management Plan  
2021

Approved By:

Allan Spencer, Director of Finance

## Introduction

This document summarises the key carbon management commitments that were set out in Sustainable Sussex, the University of Sussex [Sustainability Strategy](#) in June 2021. It has been approved at Executive Board Level by the University Director of Finance, Allan Spencer.

This document is a companion document to the [Decarbonising the Economy](#) section of the Sustainability Strategy, which clearly articulate and demonstrate our strategic commitment and plans to be net zero by 2035 (for scope, 1, 2 and 3 emissions).

## Our Commitments

Sustainable Sussex set out our institutional vision to be “one of the most sustainable universities in the world.” We committed to doing this by showing “global leadership in demonstrating and promoting all forms of environmental, social and economic sustainability at a local, regional, national and international level.”

This included our ambitious target and institutional key performance indicator of being net zero by 2035.

## Success to date

This carbon management plan builds on previous institutional successes at reducing the University’s carbon footprint. For example:

- ✓ Installing 3000 solar panels in 2017 – creating the biggest solar farm in the UK Higher Education Sector at the time
- ✓ Requiring new buildings to achieve BREEAM Excellent sustainable construction standards
- ✓ Publishing a [Sustainable Procurement Principles Framework](#) as our primary tool for influencing our suppliers and enabling them to demonstrate how they can work together with us to achieve true environmental, social and economic sustainability.

## Future Plans

Our Sustainability Strategy and [Annual Sustainability Report](#) make it clear that no matter how much we achieve, there is always more to do. With that in mind, this carbon management plan should be seen as the first step in a far reaching journey to net zero.

That is why the content contained in the plan concentrates on the most urgent and impactful actions that we are committed to take to reach net zero for all our direct and indirect emissions. This will help us to make rapid progress in tackling the climate emergency while we improve the quality of our data via our [Excellent Carbon Accounting](#) commitments, and develop more detailed carbon management plans for realising our decarbonisation ambitions in a manner that is compliant with the Science Based Target Initiative methodology for calculating our emissions.

## Our Emissions

### Scope

The [Green House Gas Protocol](#) classifies emissions in three ways – known as scope 1, 2 or 3 emissions. Examples of these are:

- Scope 1: Fuel combustion, company vehicles and fugitive emissions
- Scope 2: Purchased electricity, heat and steam
- Scope 3: Procured good and services, business travel and commuting

These emissions are also known as direct and indirect.

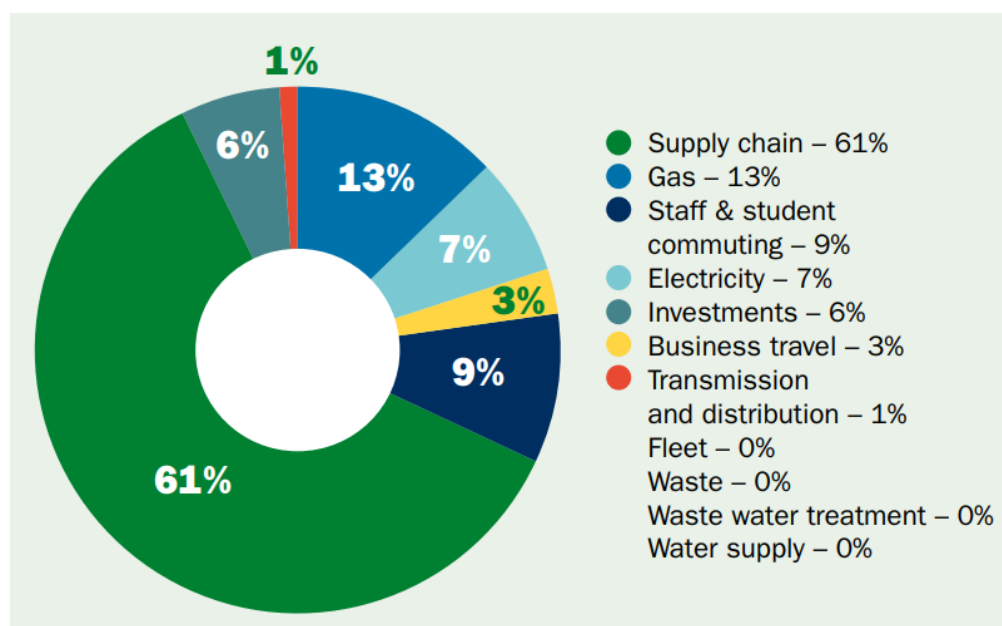
Scope 1 are direct emissions. Scope 2 and 3 are indirect emissions.

We are proud that our target of reaching net zero by 2035 includes both direct emissions and indirect emissions caused by all of the following activities.

- Gas
- Electricity
- Business Travel
- Water Supply
- Wastewater Treatment
- Waste
- Fuels
- Procured Goods and Services
- Investments
- Commuting
- Transmission and Distribution
- East Slope

### Baseline

Any journey to net zero needs to start from a baseline. Due to the distortions in behaviour caused during the global coronavirus pandemic, the University chose the year 2018/19, to set as a baseline for carbon reduction to be measured against. For **2018/19** our emissions were estimated to be **100,670 tonnes of carbon**. These emissions were broken down as follows:



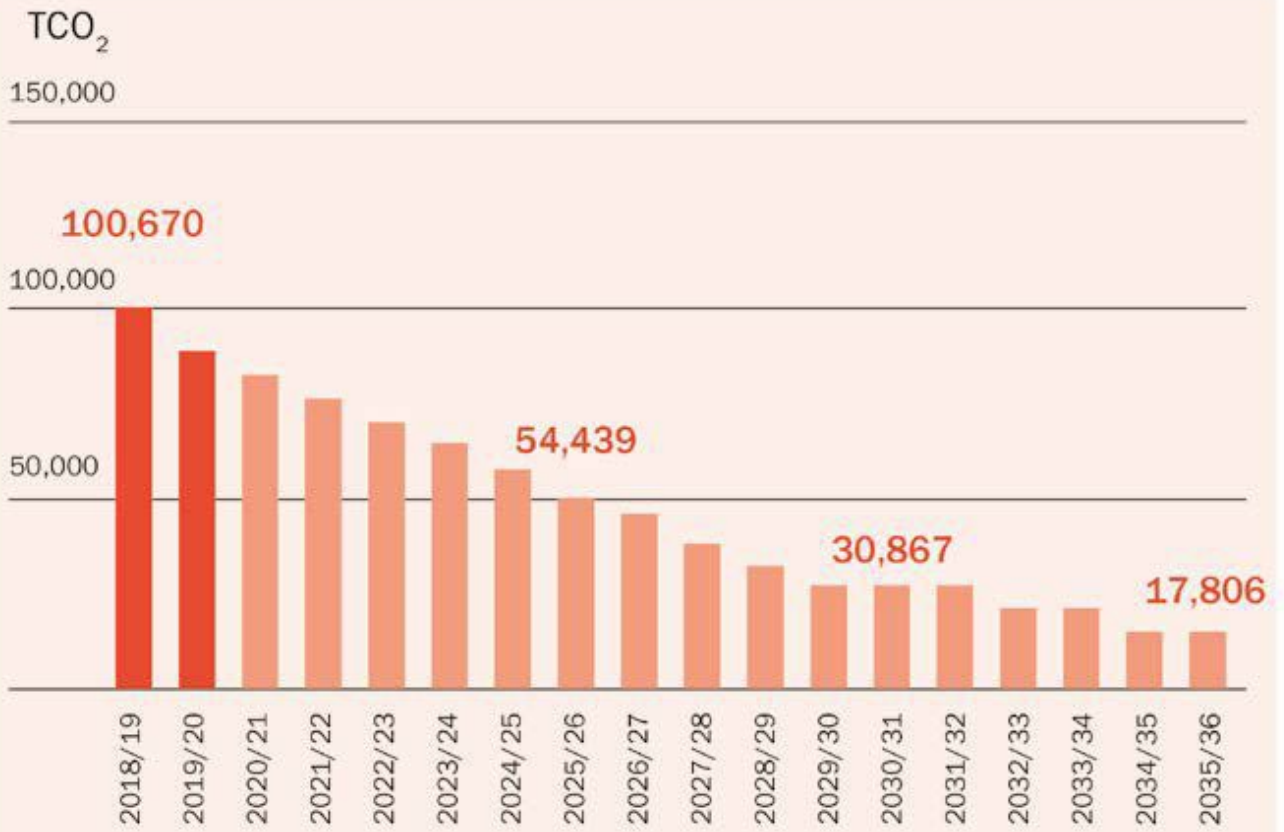
To establish this initial carbon footprint, we used a mixture of both actual and estimated data.<sup>1</sup> A list of the data sources used is provided at Annex A of this document.

### Projections to 2035

Based on our own internal modelling the following graph sets out the carbon reduction trajectory we need to follow to meet our net zero target:

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<sup>1</sup> The commitments set out in the Excellent Carbon Accounting section of our Sustainability Strategy set out our plans for improving our carbon management data so that we can rely on more actual data and less estimates and assumptions.



**Indicative interim carbon reduction targets to reach net zero carbon by 2035**

## Carbon Reduction Principles to Achieve Net Zero by 2035

To reach net zero, we need to take far reaching and transformative action. We have set out 5 key principles where we need to take action.

### Excellent Carbon Accounting

- The quality of our carbon accounting will only be as good as the quality of the data that we are collecting to inform it. We will put in place more robust carbon accounting practices to deliver constant improvement in our use of accurate emissions data.

### Energy Efficient Campus

- Reducing overall energy consumption is usually the most cost-effective way of saving carbon and reaching net zero. That is why improving the energy efficiency of our campus is the absolute bedrock of our net zero action plan.

### Decarbonised Infrastructure

- We need to invest in replacing our fossil fuel dependent infrastructure from the 20th century with modern lower-carbon alternatives.

### Supply Chain and Travel

- Procured goods and services, and travel make up a substantive part of the carbon footprint. It is essential we are taking action to address these large and complex emissions as soon as we are able.

### Compensation

- We will not compensate more emissions than recommended by the SBTi and will only use permanent carbon sequestration to compensate for any remaining emissions.

## Carbon Reduction Action Plan

The University Sustainability Strategy was accompanied by an [Action Plan](#) that shows how we will reach net zero at a strategic level.

The following timed commitments were correct at the point of publication in June 2021. Please be aware that the target dates associated with each action are subject to review and subject to amendment annually by the University Sustainability Committee. This is to ensure that we are capitalising on opportunities to bring forward or defer progress in particular areas to maximise impact and use of resources as situations change.

### Work Package 1: Energy Efficient Campus

We know that reducing overall energy consumption is usually the most cost-effective way of saving carbon and reaching net zero. That is why improving the energy efficiency of our campus is the absolute bedrock of our approach to deliver net zero.

The table below sets out actions we will take:

Action	Date to be completed by
Undertake an initial high-level audit of the energy efficiency of all of our buildings to identify the most cost-effective ways of reducing our energy consumption.	December 2021
Use the findings from the audit to prioritise a more detailed audit of the 20% of the most poorly performing buildings.	2023
Complete a detailed investment opportunity analysis of the entire estate.	2030
Make regular business cases for funding for energy efficiency improvements to our Capital Programmes Committee and external grant funders, e.g. the Public Sector Decarbonisation Scheme so that these improvements can be built into our annual maintenance and project plans.	Every year
Develop a register of minimum environmental product standards for the furnishings and fixtures that we buy for our estate and use them every time that we buy and/or replace a fixture or fitting in our building.	December 2022
Conduct a review of current environmental building standards and identify if there is a business case to move beyond BREEAM Excellent environmental construction standard.	December 2022
Investigate how we can introduce more modern flexible ways of working – including more remote working.	August 2025,
Create a network of sustainability champions to drive behaviour change from the bottom up.	Commence work in August 2021.

In Annex B of this document, we set out an indicative pathway for delivery of the Energy Efficiency and Decarbonisation Work packages.

This will be updated, once feasibility studies, audits and investment appraisals have been completed.

### Work Package 2: Decarbonised Energy Infrastructure

Even if we have the best carbon-accounting system in the world, it will mean nothing if we do not invest in replacing our fossil fuel dependent infrastructure from the 20th century with modern lower-carbon alternatives.

This process requires a change in mindset from thinking about what the cheapest product to buy now in today's world as opposed to what is going to be most cost effective over the life of this strategy. It is about asking what to invest in now to prevent us from having to pay for expensive carbon offsetting and higher energy costs in the future because we did not decarbonise early enough.

The table below sets out actions we will take, but we cannot predict where technology will be by then to know all the future decarbonisation avenues available to us. However, we have identified the four biggest opportunities to decarbonise our infrastructure over the next five years, and these are reflected in our first four action plan commitments.

Action	Date to be completed by
Produce a feasibility study to replace our Combined Heat and Power Plant with a low carbon alternative.	December 2021
Produce a feasibility study to expand our renewable energy production through the creation of an additional solar farm.	December 2021
Produce a feasibility study to create a new sustainable transport hub with bike storage, showers, public transport infrastructure and solar ports.	December 2021
Produce a feasibility study to upgrade electric vehicle, scooter and bike charging infrastructure.	December 2021
Use the findings from the studies to make appropriate business cases to the University's Capital Programmes Committee and external funders, such as the Government's Public Sector Decarbonisation Scheme to obtain the budget to begin to pay for the necessary capital infrastructure investments.	December 2026
Replace our district heating system with a low-carbon alternative.	2035

In Annex B of this document, we set out an indicative pathway for delivery of the Energy Efficiency and Decarbonisation Work packages.

This will be updated, once feasibility studies, audits and investment appraisals have been completed.

### Work Package 3: Excellent Carbon Accounting

Having a clear understanding of our greenhouse gas emissions and stretching SMART (Specific, Measurable, Achievable, Realistic and Timed) targets for reducing them are the key to success.

The table below sets out actions we will take to achieve this:

Action	Date to be completed by
Put in place robust carbon-accounting practices based on the Green House Gas Protocol produced by the World Business Council for Sustainable Development.	Ongoing
Set an annual carbon reduction target every August to be monitored as a key performance indicator by Council each year.	August 2021 and ongoing
Produce an improvement plan to improve the data quality used to calculate our footprint, and move away from estimated data.	Ongoing

#### Work Package 4: Sustainable Supply Chain

Over 60% of our current emissions come from our supply chain. Therefore, making our procurement more sustainable is the single biggest step that we can take to achieving our ambitious organisational target of being net zero by 2035.

The table below sets out actions we will take to address this critical area:

Action	Date to be completed by
Embed use of our Procurement Framework to select the suppliers that more closely share our sustainability values.	Ongoing
Collaborate and learn from others in relation to best sustainable procurement practices.	Ongoing
Assess the quality of our sustainable practices against the ISO 20400 Sustainable Procurement Standard.	August 2021

#### Work Package 5: Active and Sustainable Commuting

Promoting active travel is important because it will both reduce our emissions and contribute to our staff and students' health and wellbeing. We estimate that commuting to and from campus made up 9% of our carbon footprint in 2018/19.

The table below sets out actions we will take:

Action	Date to be completed by
Introduce a new active travel reward app for our students and staff.	August 2021
Review of all signage, cycle lanes and pedestrian paths on our campus to ensure that they are optimised for a substantial increase in sustainable travel.	August 2021
Introduce progressive parking charges where cleaner vehicle users pay less – subject to a full equality analysis.	August 2023
Investigate creating a new ultra-low emission vehicle (ULEV) leasing scheme for staff.	

#### Work Package 6: Better Business Travel

As a globally focused university, it is important that we continue to enable our academics and students to travel to conduct world-leading research that furthers the achievement of the United Nations Sustainable Development Goals (SDGs). Yet research suggests that air travel may account for around 80-95% of universities' business travel emissions, and air travel has one of the highest carbon footprints of any human activity.

This is why we will carry out the following actions:

Action	Date to be completed by
Publish and promote a new sustainable business travel policy based on good practice (Tyndall Decision Tree).	December 2022
Work with travel partner to update booking algorithms in favour of low carbon options.	December 2022
Explore scope to offer domestic field trips.	December 2022



## Cost of Inaction

We know from the analysis underpinning our net zero targets estimated that the cost of achieving net zero by 2035 would be approximately £13.8m cheaper than if we delayed achieving it until 2040. We also know that energy prices are only going to rise, strengthening the businesses case for greater investment in renewable energy and more efficient buildings.

In addition we predict that if we don't take action now to reduce our carbon footprint, it could increase by almost a further 50% by 2035.

We realise that urgent action needs to be taken immediately.

To support delivery of the plan we have already planned investments totalling £660,000 to complete the first stage of upgrading our Building Energy Management Systems.

Once we have completed the audit and feasibility studies (as set out in actions for Energy Efficiency and Decarbonised Energy Infrastructure Work Packages) we will make appropriate business cases to the University's Capital Programmes Committee and external funders, such as the Government's Public Sector Decarbonisation Scheme, to obtain the budget to begin to pay for the necessary capital infrastructure investments by December 2026.

In addition, the University has an Education and Research Investment Programme (ERIP), which will deliver vital investments totalling £200 million over the next five years, and a proportion of the ERIP funds will support sustainability initiatives to deliver against the commitments and actions set out in this document.

## Governance

All of the actions in this plan are replicated in the University's Sustainability Strategy, and therefore are subject to the same Governance arrangements.

In summary:

- All of the actions in the strategy will be implemented in partnership between our dedicated Sustainability Team and a named Senior Leader within the University
- The University Sustainability Committee, chaired by the University Vice Chancellor at the time the Sustainability Strategy was published, will also be responsible for formally reviewing the action plan once a year in the spring term and suggesting any amendments to targets or sub-targets on an annual basis, which will be made public on our website.
- The Sustainability Committee will make recommendations to the Capital Infrastructure Programmes Board for new sustainability-related investments and infrastructure commitments based on robust business cases
- Our Council (the highest-level decision-making body at the University) will receive a report on our key performance indicator target in relation to achieving net zero each year and will hold the University to account on making good progress against the action plan

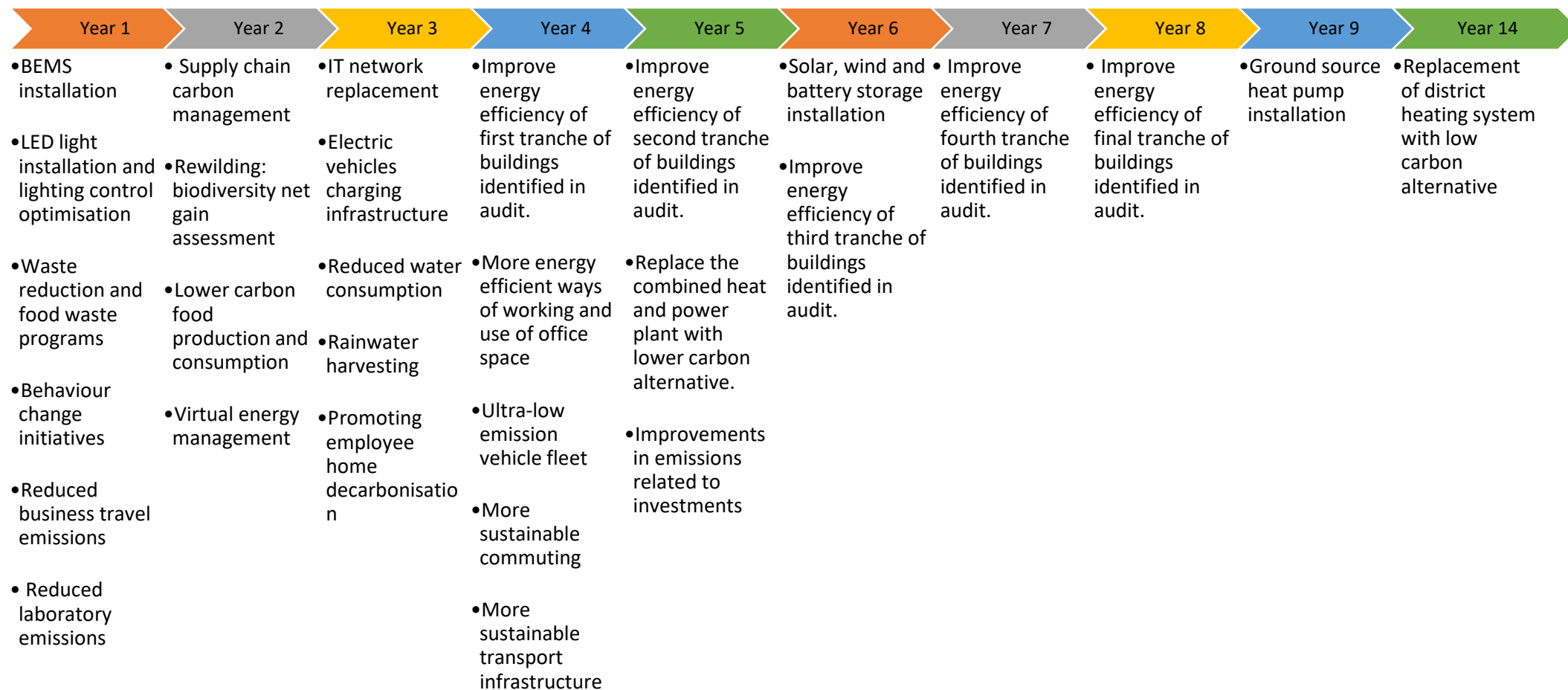
## Data Methodology

To establish our initial carbon footprint, we used a mixture of both actual and estimated data.<sup>2</sup>

Source	Details	Methodology
<b>Gas</b>	HESA	Half hourly meter read data used - Kwh
<b>Fuels</b>	Vehicle fuel (6 vehicles)	Company Car estimated annual mileage divided by MPG to calculate fuel consumption by litre.
<b>Electricity</b>	HESA	Half hourly meter read data used - Kwh
<b>Business Travel</b>	Expensed travel and train bookings via booking partner	Obtain expensed travel (train, taxis, hotels) via Procurement Spend by category, apply Quantis conversion factors to obtain emission estimates.
<b>Staff &amp; Student Commuting</b>	Commuter Travel Survey	Based upon the 2018 Sussex Estates and Facilities travel survey
<b>Supply Chain</b>	Procurement Spend	Estimates from supply chain spend by category vs Quantis US\$ conversion factors
<b>Waste</b>	HESA	Waste Stream Generated by Weight - Tonnes
<b>Water Supply</b>	HESA	Water Bills - m3
<b>Waste Water Treatment</b>	Water Supplier	Water Bills - m3
<b>Investments</b>	Joint Ventures, Equity Investments, Associated Companies, Debt Investment, Subsiders	Investment value (UoS £) against type of investments i.e. industry classification (manufacturing, medical, real estate, etc). Application of Quantis emission factors against value vs industry.
<b>Investments</b>	LionTrust Investments	Investment value (UoS £) against type of investments i.e. industry classification (manufacturing, medical, real estate, etc). Application of Quantis emission factors against value vs industry.
<b>Transmission and Distribution (HESA electricity)</b>	Electricity Supplier	Half hourly meter read data used - KWh
<b>East Slope Housing Development</b>	Energy Consumption	Monthly submeter reads used - KWh

<sup>2</sup> The commitments set out in the Excellent Carbon Accounting section of our Sustainability Strategy set out our plans for improving our carbon management data so that we can rely on more actual data and less estimates and assumptions.

Possible Indicative Net Zero Pathway for Energy Efficiency and Decarbonisation



Please note that the following diagram is for illustrative purposes only. Once we have completed our feasibility studies and energy efficiency audits and investment appraisals and further stakeholder engagement we will be able to produce a more detailed and accurate pathway for net zero, that we expect to look similar to this.