

St Catharine's College

Roadmap to Net Zero Emissions

2023 v.1



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1 Foreword

In 2020, St Catharine's formally acknowledged that climate change is one of the biggest challenges that humanity has ever faced. As part of our collective response the College developed an environmental sustainability strategy in February 2022, which articulated for the first time our intention to achieve carbon-equivalent net zero status by 2040 – a crucial step towards ensuring that future generations inherit an environment that is healthier and more biodiverse.

Over the following 18 months, students, staff and Fellows worked to identify how the College will need to adapt to ensure we can achieve net zero status before 2040. This meant developing targeted action plans to guide progress in key aspects of life at St Catharine's. I applaud them for this crucial work, and for the tenacity and focus that it has taken to produce this roadmap and accompanying action plans. I note that this is 'Version 1'; tacit acceptance that we will need to work hard not simply on delivering against our target, but to constantly adapt and reinforce our work as new challenges and opportunities inevitably arise.

The College's mission of scholarly learning and teaching rightly remains at the heart of the roadmap. In this sense the approaches outlined in this document might not be appropriate or even effective for other communities, or indeed for members of our own community in their lives away from St Catharine's. But in addition to delivering carbon-equivalent net zero status by 2040, we hope that our community, in their lives outside and beyond their time at St Catharine's, will adopt the same principled approach and contribution to reversing the damage of climate change.

Professor Sir Mark Welland (2016)
Master, St Catharine's College

2 Executive summary

The focus of this report is to provide a first version of a roadmap for reducing our emissions to zero.

St Catharine's is committed to being an inclusive community, upholding excellence, diversity and equality of opportunity for all members. Learning and teaching are at the heart of what we do and are integral to delivering this roadmap.

An initial review of our emissions has identified a number of priority areas where we should develop plans to achieve reductions in our emissions over the coming years. These areas are summarised below and are supported by action plans within this report. These commitments will need to be reviewed and updated / added to in subsequent versions of this roadmap.

- ✓ **Purchased electricity (includes reduced consumption)**
 - Purchased electricity to be generated from non-emitting energy sources from 2021
- ✓ **Energy usage (includes reduced consumption and technology)**
 - No like for like boiler replacements from 2021
 - All projects to include future proofing to support move to new technologies from 2022
 - Energy usage to be reported annually, enabling tracking of reductions in usage
- ✓ **Purchased goods and services**
 - Removal of ruminant meat from menus by 2027
 - Increase in provision of sustainable plant-based food options by 2027
 - Ensure fish is procured from sustainable sources from 2023
 - Reduce food waste by 50% year on year from definition of baseline in September 2024
- ✓ **Construction activities**
 - All projects to embrace the principle of embodied carbon reduction potential
- ✓ **College travel**
 - All St Catharine's vehicles to be electric by 2023
 - Sustainable travel policy to be developed for all St Catharine's-funded travel by 2024
 - Plan to be developed to enable and incentivise more sustainable commuting by 2024
 - Plan to be developed to enable and incentivise reduced emissions associated with student commuting by 2025
- ✓ **Waste reduction**
 - Understand our waste streams and have a plan for reducing them by December 2024
 - Reduce food waste by 50% year on year until it is a maximum of 10%
 - Stop using single use plastics (as required by law) by October 2023 and introduce charge for other single use containers in order to reduce use
- ✓ **Investments**
 - Achieve net zero greenhouse gas emissions from St Catharine's investments by 2040
 - Incorporate our net zero ambitions at lease renewal and for any new property leases
 - Banking providers and products to align with St Catharine's social and environmental policies by 2024
- ✓ **Community engagement and communications**
 - Demonstrate that on average 85% of respondents can recall our net zero target in our annual survey of students, staff and Fellows in 2025
 - Demonstrate that on average 95% of respondents can recall our net zero target and 85% can recall at least two other supporting targets from this roadmap in our annual survey of students, staff and Fellows in 2030
 - Track participation and group identification/status against the three groups described in the action plan through an opinion survey of the St Catharine's community

3 Introduction and background

3.1 UK context

The UK has made a legally binding commitment to achieve net zero emissions by 2050. This can be via a combination of reducing existing emissions and actively removing greenhouse gases (GHG). The intention of focussing on net zero emissions rather than 'gross zero' is an acknowledgement at government level that reducing all emissions to zero may not be realistic. Instead it is assumed that there will be some emissions, but that they will be fully offset through carbon sinks.

The focus of this report is to provide a roadmap for reducing emissions to zero; offsetting is not considered. This plan should be considered to be a first version and it is expected that it will require updating and refining as actions are completed and progress towards targets is assessed.

3.2 College context

As an educational establishment St Catharine's has learning and teaching at its core, which enables it to rise to the challenge of critiquing and understanding the implications of climate change. This, in turn, puts us in an excellent position to develop and adopt the behavioural and cultural changes necessary to achieve our ambitions. While this document does not provide a detailed review of supporting evidence for each action, the community engagement and communications action plan will be crucial if we are to promote education and discussion around the evidence that has informed our approach.

There are many members of the St Catharine's community who are passionate about combatting climate change and implementing pragmatic changes that will enable us to achieve net zero while simultaneously addressing environmental concerns. The College has an active Green Working Group (GWG), made up of students, staff and Fellows. This group has previously created an Environmental Sustainability Strategy for St Catharine's, which was published in February 2022 following approval by Governing Body (see Appendix A), of which this roadmap and the associated action planning form a key component.

The priority areas and the goals outlined in this roadmap are specific to the St Catharine's community and our specific circumstances in 2023. These are intended to be updated between now and 2040 to reflect best practice and further opportunities to reduce our emissions. We are mindful that these might not be appropriate or even effective approaches for other communities, or indeed for members of our own community in their lives away from St Catharine's. However, it is important that we are open and accountable in the delivery of our plans and that we encourage dialogue as we publish this roadmap.

3.3 Aim of this plan

This plan aims to provide a roadmap for how we can achieve our goal of carbon-equivalent net-zero status by 2040 by reducing our emissions.

It considers:

- How we define our emissions in the context of monitoring reduction;
- Setting of targets and a mechanism for reviewing our performance;
 - Science Based Targets
 - Activity Based Targets
- Action plans for reducing emissions, including community engagement and communication; and
- A governance and organisation structure for implementing this roadmap.

4 Defining our emissions

We are including all GHG emissions generated by the actions of St Catharine's. This means emissions produced inside our physical boundaries, and also those produced as a result of these activities e.g. travel to and from St Catharine's and agricultural emissions related to food consumed at St Catharine's.

There are standardised guidelines for accounting for GHGs, presented in the GHG protocol ("A Corporate Accounting and Reporting Standard", revised edition, World Business Council for Sustainable Development and World Resources Institute). These guidelines categorise emissions into three scopes, which are discussed further in Appendix B.

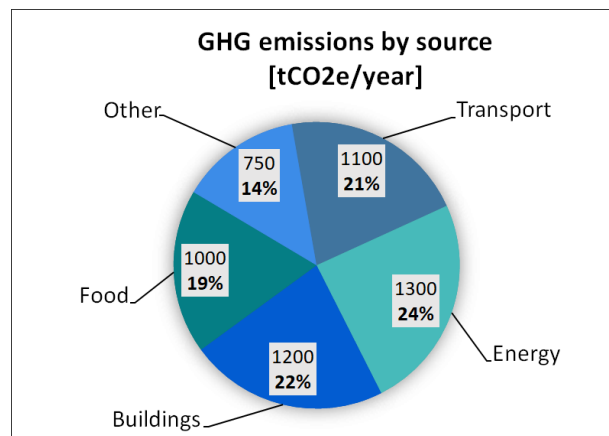
An initial piece of work has been undertaken to define our emissions via an MPhil research project undertaken by Daniela Beatriz Duenas Israel, under the supervision of Professor Julian Allwood. "Cool Cats - Developing a pathway for zero emissions at St Catharine's College; Cambridge" (Israel, 2020). The following steps have been taken to calculate GHG emissions:

- 1) The activity and consumption data, such as e.g. km travelled or kWh consumed is determined,
- 2) The associated emission factor is determined for each activity. These were mainly selected from the UK Government GHG Conversion Factors for Company Reporting (Department for Business, Energy and Industrial Strategy, 2019).
- 3) The consumption in each category is multiplied by the conversion factor to obtain the amount of CO₂e and the totals are added to obtain the final carbon footprint for St Catharine's

$$\text{GHG emissions} = \text{Activity data} \times \text{Emissions factor}$$

4.1 Current GHG emissions at St Catharine's

To establish an estimate for the total GHG emissions for St Catharine's, data from 2018/2019 has been used to estimate CO₂ equivalents – tCO₂e (note - the emissions of each GHG - CO₂, CH₄, N₂O, etc. - are typically calculated separately and then converted to CO₂ equivalents on the basis of their global warming potential). Calculations are presented in Israel 2020 and results in an estimate of 5400 tCO₂e. The figure below shows the contribution of each category.



2018/19 total emissions by source [tCO₂e] - Israel 2020

Energy contributes the most to total emissions, but there is a relatively even split between the four main categories. Further information on each category is presented below.

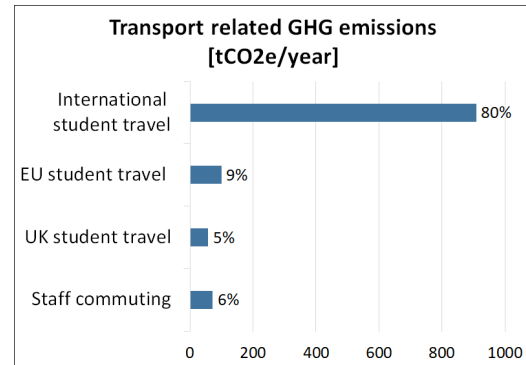
4.1.1 Transport: student travel from their homes to university and vice versa, and staff commuting

The activity data for this category is based on kilometre travelled per passenger. Data sources and emissions factors vary according to the form of transport used and are detailed below.

- **Student travel:** this category considers the distance travelled (return trip) by each student to get to St Catharine's from their home, and back again. The assumptions used to estimate the tCO₂e from student travel are presented in Israel 2020.
- **Staff commuting:** data for St Catharine's staff commuting was not available. Estimates were made based on data obtained from the University's Transport Strategy (University of Cambridge, 2018)

Travel by staff / Fellows for work purposes other than commuting has not been considered within the calculations.

A total of 1100 tCO₂e are contributed from transport, where student travel presents a much higher impact than staff commuting. Students' trips to and from university contribute 94% of the category's emissions, as shown on the figure (right). Israel 2020 presents further breakdowns based home country location, student type and commuting methods.

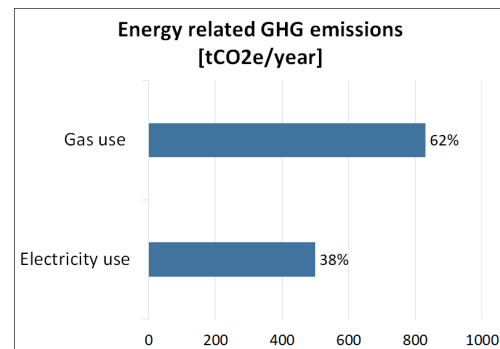


4.1.2 Energy: electricity and gas consumption at St Catharine's properties

Electricity and gas consumption data is measured and collected by St Catharine's. The number of kW consumed per month was used to calculate GHG emissions. The data set used is based on the best available data either from direct measurement, invoice or best estimate based on what we understand about usage.

The energy category contributes a total of 1300 tCO₂e, where gas use has a higher impact than electricity consumption, contributing 62% of total emissions, as is shown in the figure (right).

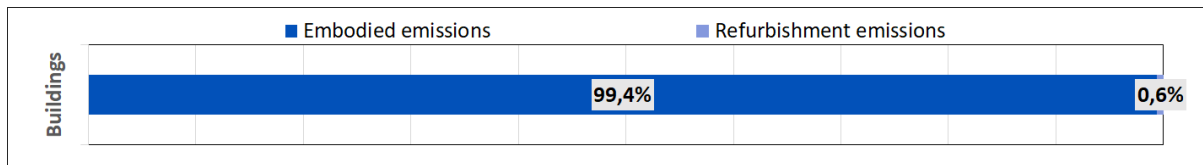
Israel 2020 provides further breakdowns of how electricity and gas may be used and therefore which activities consume the most energy. Estimates suggest the highest tCO₂e from electricity usage comes from clothing washing, with washing and tumble-drying contributing 77% of electricity-use emissions. Gas usage was broken down between space heating and water heating by making assumptions based on usage in summer months versus winter months.



4.1.3 Buildings: embodied and refurbishment emissions for all St Catharine's accommodation

Estimates of the emissions per m² of floor area associated with different types of dwellings have been made by Israel 2020. For each accommodation building, the floor area in m² was estimated based on an average of measurements on Google Earth and a typical room size multiplied by the total number of rooms per building. The total number of rooms per building was estimated based on the number of beds per building provided by St Catharine's Accommodation Handbook. For the purposes of determining emissions factors, St Catharine's buildings were considered either as two-story houses or as a collection of one-bedroom flats, as they were the closest approximation to the data available.

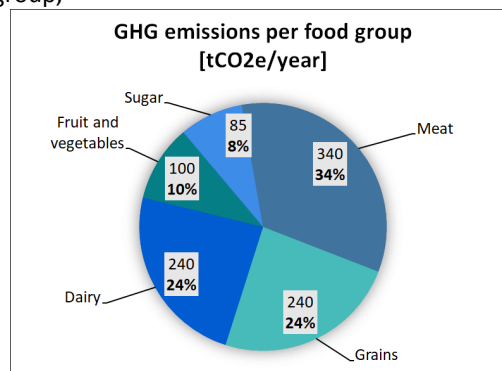
A total of 1200 tCO₂e are contributed by embodied and refurbishment emissions of St Catharine's buildings. The figure below breaks down emissions by source, with embodied emissions providing nearly all emissions for this category. It is important to note that when considering the total lifespan of a building, refurbishment emissions are of increased relevance.



4.1.4 Food: emissions related to the agricultural production of food consumed at St Catharine's

GHG emissions have been estimated (Israel 2020) considering average emissions related to agricultural production per 100kcal and average kcal consumption of different food groups (St Catharine's food consumption was not directly available).

Calculations suggest 1000 tCO₂e are emitted as a result of food consumed at St Catharine's. The figure below shows GHG emissions by food group,



Contribution of GHG emissions of food consumption by food group

It is clear that the consumption of animal products is the highest contributor, with 34% of emissions related to meat consumption and 24% to dairy. Despite grains having some of the lowest GHG emissions per 100 kcal, they contribute the same emissions as dairy products, likely due to quantities consumed.

4.1.5 Other: emissions associated with the procurement of goods and services

This category includes procurement emissions previously not considered. As St Catharine's data was not readily available, estimates were made based on other UK universities' carbon footprints. The highest impact activities considered by two studies were included - manufactured products, computers and communication technology, paper products and business services, which accounted for over 80% of procurement emissions in the two studies considered by Israel 2020.

5 Setting targets and reviewing our performance

The work of Israel 2020 has provided a high level overview of emissions and, importantly, the main categories that affect our operations. This enables us to identify areas where further work is needed to define our baseline, targets and actions that we can take to 'use and consume less' alongside decarbonising our operations. We have used two methods to define our targets, as described below.

Whilst useful for wider comparisons, SBTs are data focussed and we will only achieve a reduction in emissions if we take actions. Such actions may include a combination of employing new technologies (e.g. replacing end of life gas boilers ideally with zero emission sources such as heat pumps) and a commitment to a 'use and consume less' - an initiative that promotes restraint. Action plans are therefore focussed on activity based targets.

5.1 Science Based Targets

In 2019 the University of Cambridge adopted a Science Based Target (SBT) for scope 1 and 2 emissions (emissions from energy usage and purchased electricity), which committed it to reduce emissions to absolute zero by 2048, with a desire to achieve this at least 10 years ahead of the target date. The University's Environmental Sustainability Strategy Committee also committed to supporting the 31 colleges by commissioning Advancing Sustainability Ltd to work with a subset of six colleges to develop a tool to enable each to:

- Generate its own SBT; and
- Produce an annual carbon emissions report.

The SBTs are based on the principle that we are doing our 'fair share' to reduce global emissions in line with the aims of the Paris agreement. In guidance provided to colleges, Advancing Sustainability has set out 6 steps:

- **Step 1:** Set boundaries: recommended to use the Operational Control Approach (considering buildings that we have the authority to use and maintain). This will help give consistency across colleges and the wider University
- **Step 2:** Establish carbon footprint: collate energy and fuel consumption data and fugitive emissions data, for buildings within the scope of our boundary - this will be input into a tool developed by Advanced Sustainability Ltd to calculate their scope 1 and 2 carbon emissions.
- **Step 3:** Decide which decarbonisation pathway is appropriate: There are several different assumptions that can be made when developing a SBT – for example, around how quickly our electricity supply will decarbonise – Advancing Sustainability Ltd have made such assumption on our behalf in developing the tool.
- **Step 4:** Set a baseline year for your target: Every SBT needs a baseline year, against which progress is measured. It is recommended that 2018 / 2019 is used as a baseline year, which aligns well with the work of Israel 2020
- **Step 5:** Run the numbers: Take all of the above into account to generate our SBT.
- **Step 6:** Submit our SBT for validation: The SBTi (Science Based targets Initiative) will undertake validation of a company's SBTs, which allows the company to publish their target with confidence. Unfortunately, this service is not currently available for the education sector so this step will not be carried out at this stage.

The SBT tool can be used to develop targets, and trajectories for emissions and energy consumption.

5.2 Activity Based Targets

The work of Israel 2020 identified a number of activities which cause emissions and are not included in the process for defining SBTs. In some cases work will need to be done to define our baseline for these activities, which that we can monitor progress towards achieving targets, whilst for others we can set targets moving forwards.

Activity based targets can be used to enable us monitor change in operations and behaviours, which are designed to achieve lower emissions and lower energy consumption. In many cases this will require us to understand a baseline position, though in others it will be sufficient to define guiding principles.

Areas where it may be helpful to define baseline include:

- Purchased goods and services
 - We will ultimately require a methodology to identify e.g. our top 5 carbon emitting purchases (e.g. food, computer equipment, stationery) and then to define a baseline by activity;
 - Our focus should be to set reduction targets in a way that can be measured - by purchase / consumption / usage (e.g. we will halve purchase by a given date);
- College travel – student, staff and fellows
 - We will need to build on the work of Israel (2020) to establish a baseline via surveys to understand frequency of transport mode e.g. number of journeys x length of journey and to consider ways in which St Catharine's can help our student body reduce the number of journeys they take and/or the type of transport they choose to use;
 - Our focus should be to set reduction targets in a way that can be measured against the baseline e.g. halve the number of journeys by flying and driving petrol / diesel vehicles by 2030
- Waste reduction
 - We will need to identify our waste streams and develop plans to use less, produce less, following the principles of the waste hierarchy; and
 - Our focus should be to set reduction targets in the quantity of waste that requires disposal and then identify the most sustainable disposal routes.

Areas where it may be helpful to define guiding principles include:

- Investments
 - Working with our managers to set expectations in what we see as acceptable investments and engagement strategies from a sustainability perspective;
- Construction activities – new buildings and refurbishments
 - Requiring a sustainability plan for all major projects;
 - Employing sustainable building methods; and
 - Building sustainability requirements into our supply chain.

6 Action plans for reducing emissions

In order to achieve a reduction in emissions we need clear action plans, ownership, timescales and systems of monitoring. The following pages describe these plans.



St Catharine's College Sustainability Action Plans

- ✓ Purchased electricity (includes reduced consumption)
- ✓ Energy usage (includes reduced consumption and technology)
- ✓ Purchased goods and services
- ✓ Construction activities
- ✓ College travel
- ✓ Waste reduction
- ✓ Investments
- ✓ Community engagement and communications

6.1 Purchased electricity action plan

According to “Absolute Zero – Delivering the UK’s climate change commitment with incremental changes to today’s technologies” 2019 (UK FIRES Report), by 2050 the UK will have enough electricity generated from non-emitting sources to power approximately 60% of today’s energy using activities (apart from shipping and flying). This means that whilst we should focus on purchasing electricity from non-emitting sources we also need to focus on reducing demand and consumption. This will require increased efficiencies in the thermal performance of buildings, heating systems and small appliances, alongside behavioural change. Actions to support these requirements are picked up in the action plans on energy usage, construction activity, and community engagement and communications.

Electricity purchasing is carried out with a single supply contract negotiated on behalf of all Cambridge colleges. Separate contracts are operated for non-half-hourly and half-hourly electricity. Both contracts have been recently renewed:

Non-half-hourly electricity outcome:

Opus, our incumbent supplier, has been selected for a further two years, based on both their costs and strong credentials for renewable generation from 100% UK solar with a Renewable Energy Guarantee of Origin (REGO).

Half-hourly electricity outcome:

Smartest, our incumbent supplier, was selected again based on both cost and their environmental credentials with a guarantee that 100% of the energy comes from UK-generated wind, solar or hydro sources, and an ability for the Colleges to make decisions on which renewable projects are of interest. They will allocate the REGO certificates from the specific sites to the Cambridge colleges for evidence-based carbon reporting

Action	Timeframe	Owner
Lobby the University of Cambridge’s Bursars Committee and General Purchasing Sub-committee to require future contracts to maintain current levels of guarantee of power generation from renewable sources	At contract renewal, and prior to in order to enable potential budget concerns to be addressed	Bursar / Operations Director
Seek evidence that generation sources are as promised	Throughout contracts	Bursar / Operations Director

Commitments

Purchased electricity to be generated from non-emitting energy sources from 2021

6.2 Energy usage action plan

This plan encompasses three elements:

- 1) Reducing the amount of energy we need via behavioural change and improvements in building performance (it is estimated that by 2050 we will only be able to generate enough electricity from non-emitting sources to service 60% of today's needs (UK FIRES Report));
- 2) Phasing out our reliance on emitting sources of energy generation (gas); and
- 3) Generating our own renewable energy.

N.B. What is not captured in this action plan is the recent transition to an all-electric kitchen as part of the Central Spaces development, and the installation of air source heat pumps in the new development at the St Chad's site to enable operation of the two new buildings to be 'fossil-fuel' free on completion in September 2023. As these examples are already 'in-hand' they can form case studies for what has already been achieved.

Action	Timeframe	Owner
Develop Science Based Targets if required	12 months	Operations Director
Develop database of building fabric condition that can be used to inform requirements for upgrades ahead of changes to heat source <ul style="list-style-type: none"> • Wall insulation • Roof insulation • Windows • Lighting 	6–12 months	Head of Buildings and Maintenance
Develop and implement programme of building audits / thermographic surveys to supplement database	12 months	Head of Buildings and Maintenance
Review asset register in relation to age of gas installation and identify planning timeframes for changing gas installations to alternative methods	6 months	Head of Buildings and Maintenance
Undertake feasibility study on property by property basis to identify alternative methods of heating / hot water generation, current electrical capacities and potential for increasing capacities	Off-site – 3 years On-site – 5 years	Operations Director / Head of Buildings and Maintenance / External consultant
Review estate to identify potential for energy generation (solar panels)	2 years	Operations Director / Head of Buildings and Maintenance / External consultant
Develop high level phased plan for replacing gas boilers, driven by <ul style="list-style-type: none"> • End of life date for existing installation • Feasibility of alternatives (start with off-site / smaller properties) 	Dependent on gas installation lifetimes and output from feasibility study	Operations Director / Head of Buildings and Maintenance / External consultant
Develop high level plan for building fabric improvements to enable use of electricity to be minimised	Ongoing	Operations Director / Head of Buildings and Maintenance / External consultant
Develop and implement campaign to reduce energy use via behavioural change <ul style="list-style-type: none"> • Ventilation vs heating controls • 'A degree lower' 	9 months (launch in Michaelmas Term 2023)	Operations Director / Head of Buildings and Maintenance / Operations and Projects Coordinator / Communications Manager
Engage with networks / groups discussing Cambridge wide district heating network (most likely solution for much of main site)	Ongoing	Operations Director

Review potential to install stand alone, non-gas heating as part of Hobson's redevelopment	12 months	Operations Director / Head of Buildings and Maintenance
Review fugitive gas emissions and plan to reduce	12 months	Head of Buildings and Maintenance
Use output from above actions for develop costed plans for replacing gas boilers	Ongoing	
Implement replacement of gas boilers based on approved plans	Ongoing	
Implement improvements to building fabric based on approved plans	Ongoing	

Commitments

No like-for-like boiler replacements from 2021

All projects to include future proofing to support move to new technologies from 2022

Energy usage to be reported annually, enabling tracking of reductions

6.3 Purchased goods and services action plan (food)

This action plan considers emissions associated with goods and services that St Catharine's purchases, which could be anything ranging from food and IT equipment, to maintenance or consultancy services. In this first version the focus is on emissions associated with food, as one of the largest areas of impact given the amount we purchase and the emissions associated with many of the foods we provide.

Where we source our food from and the methods used in the supply chain can have a considerable bearing on the environmental footprint of produce, for example beef from grassfed cattle on Midsummer Common has a considerably lower impact than cereal / grain-fed cattle. However, the nature of our operations mean that the quantities of produce we need are often not compatible with small suppliers; a reliable source of produce is essential for us to maintain our service.

Alongside improving individuals' knowledge and understanding of what sustainable food is, it will be critical to provide support and training to our Chefs and Catering and Conference teams more widely as we seek to implement our actions.

In developing the actions below care will need to be taken in how we implement them, including:

- Consideration of the sustainability implications of plant-based foods, such that we do not solve one problem but create another
- Taking account of nutritional and dietary requirements, including allergies.

Action	Timeframe	Responsible person
Remove ruminant meat from our menus	To reduce the provision of ruminant meat such that it is no longer offered by no later than 2027. Monitor via food purchasing systems. Conference requirements to be monitored closely to ensure no resulting drop-off in business.	Catering and Conference Director, Catering Conference and Events Committee
Increase the provision of sustainable plant-based food options across our menus	To increase the provision of plant based food such that more plant based options than meat options are offered on menus by no later than 2027. Monitor via menus and replacement of meat dishes (particularly ruminant) with plant-based dishes.	Catering and Conference Director, Catering Conference and Events Committee
Ensure fish is procured from sustainable sources	Checking with suppliers to ensure that fish that is being sold is not on the 'fish to avoid' list and where possible to serve fish from the MCS good fish guide, with immediate effect	Catering and Conference Director, Catering Conference and Events Committee
Ensure that animal welfare is adhered to through red tractor assured standards and SALSA accreditations	To check with suppliers to ensure all have red tractor and SALSA accreditation, by the end of 2024	Catering and Conference Director, Catering Conference and Events Committee
Reduce food waste	We will define our baseline for current food waste by September 2024, and will reduce our waste by 50% year on year until it is no more than a maximum of 10%.	Catering and Conference Director, Catering Conference and Events Committee

Reduction in usage of disposable food containers and cutlery.	Reduce purchasing of disposable food containers and cutlery by 50% year on year; check via reduction on invoices and charge for use from Michaelmas Term 2023.	Catering and Conference Director, Catering Conference and Events Committee
Increase the awareness of the sustainable food policy.	Sustainable food policy to be shared with appropriate committees at St Catharine's for approval, policy can be accessed on the College's website. Monitor via engagement strategy	Catering and Conference Director, Catering Conference and Events Committee, Communications Manager
Training for chefs on vegan and plant-based meal creation.	Training sessions to take place for catering staff on cooking and creating vegan and plant-based dishes. Over the course of 2023 and 2024, and beyond as required	Head Chef, Catering and Conference Director
Looking at 'Nudging exercises' to encourage purchases in cafeteria, bar and formal hall of plant-based meals. E.g. <ul style="list-style-type: none"> Experiment with ensuring plant-based meals 'front and centre' in the food offer to increase awareness and increase sales Default to none meat based, meat based menus are already more expensive Get people involved in decision making e.g. tasting alternatives 	Ongoing	Head Chef, Catering and Conference Director
Increased advertising of sustainable plant-based meals.	Using social media, posters and themed days to increase awareness and sales of plant-based meals. Over the course of 2023 and 2024, and beyond as required	Catering and Conference Director, Catering Conference and Events Committee, Communications Manager

Commitments

Removal of ruminant meat from menus by 2027

Increase in provision of sustainable plant-based food options by 2027

Ensure fish is procured from sustainable sources from 2023

Reduce food waste by 50% year on year from definition of baseline in September 2024

6.4 Construction activities action plan

A whole carbon lifecycle approach needs to be taken for our construction activities, considering both the embodied carbon and operational carbon emissions. Embodied carbon accounts for the emissions associated with the materials used to construct buildings, whilst operational emissions are those generated during day to day running of the building.

The figure presented below (taken from <https://ukgbc.org/resources/net-zero-carbon-buildings-framework/>) provides a framework to achieving a net zero carbon building. The energy usage action plan covers steps 3 and 4; this construction activities action plan addresses step 2, though it is noted this version of our roadmap (version 1) does not address off-setting, as we endeavour to keep requirements to a minimum.

UKGBC published the **Net Zero Carbon Buildings Framework Definition** in 2019 to provide the industry with clarity on the definition of net zero carbon buildings. Given the evolving nature of guidance on this topic, it was intended to be built on over time – the reason why it was titled a ‘framework’. It sets out high-level principles for achieving net zero carbon for construction and for operational energy, with the noted intention that further detail and stricter requirements would be developed over time.

The Framework sets out an overarching set of principles to follow, with a ‘reduction first’ approach to achieving net zero carbon. Each principle includes the approach that should be followed, technical requirements and, where relevant, any areas for future development.

Framework clarifications

Since 2019, UKGBC has published (or supported the development of) additional pieces of guidance which layer onto the original framework. This guidance strengthens the framework with additional technical requirements and, in some instances, supersedes the high-level guidance within the original framework.

To support the navigation of this guidance alongside the framework, to take account of the ongoing emerging industry net zero carbon buildings guidance and best practice and responding to common queries received we have produced a NZCB Framework Definitions Clarifications document available [here](#).

[DOWNLOAD CLARIFICATION DOCUMENT](#)

The below outlines key clarifications to the original framework and the related the Carbon reduction hierarchy principal points clarified.

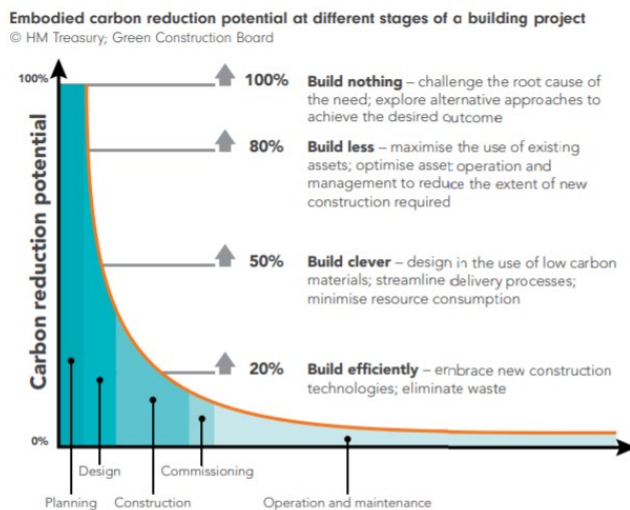
Steps to Achieving a Net Zero Carbon Building

- 1. Establish Net Zero Carbon Scope***
 - 1.1 Net zero carbon – **construction**
 - 1.2 Net zero carbon – **operational energy**
- 2. Reduce Construction Impacts**
 - 2.1 A whole life carbon assessment should be undertaken and disclosed for all construction projects to drive carbon reductions
 - 2.2 The embodied carbon impacts from the product and construction stages should be measured and offset at practical completion
- 3. Reduce Operational Energy Use**
 - 3.1 Reductions in energy demand and consumption should be prioritised over all other measures.
 - 3.2 In-use energy consumption should be calculated and publicly disclosed on an annual basis.
- 4. Increase Renewable Energy Supply**
 - 4.1 On-site renewable energy source should be prioritised
 - 4.2 Off-site renewables should demonstrate additionality
- 5. Offset Any Remaining Carbon**
 - 5.1 Any remaining carbon should be offset using a recognised offsetting framework
 - 5.2 The amount of offsets used should be publicly disclosed

D New buildings and major refurbishments targeting net zero carbon for construction should be designed to achieve net zero carbon for operational energy by considering these principles.

* Please also note, a further scope for net zero whole life carbon (1.3) will be developed in the future.

In addressing step 2, as outlined above, there are some practical considerations we should take to minimise embodied carbon, as outlined on the figure below and articulated in the actions in the table below:



Sustainable construction standards such as BREEAM and Passivhaus standards may be adopted to minimise energy demand and consumption during building operation.

Action	Timeframe	Owner
Governance to require that the approval of all projects that involve new buildings includes robust justification for why we need to build and what alternatives have been explored and discounted, particularly in relation to re-using or re-furbishing existing assets	Immediate effect upon approval of this report	Governing Body and Major Building Projects Committee (MBPC)
Where new building cannot be discounted, design specifications to require minimised volume of materials and the use of low carbon materials	Immediate effect upon approval of this report	MBPC, Operations Director, Head of Buildings and Maintenance
Sustainable construction standards to be adopted for all new buildings; and the selection of an appropriate standard to be justified (e.g. BREEAM, Passivhaus)	Immediate effect upon approval of this report	MBPC, Operations Director, Head of Buildings and Maintenance
Tenders and evaluations to include consideration of resource consumption during the project e.g. transportation needs and use of machinery that uses alternative fuels	Immediate effect upon approval of this report	MBPC, Operations Director, Head of Buildings and Maintenance
All full refurbishment projects (external and full M&E replacement) to include plan to consider opportunity for carbon reduction e.g. acceptance of wider comfort conditions, shading, reducing solar gain, natural ventilation	Immediate effect upon approval of this report	MBPC, GEC, Operations Director, Head of Buildings and Maintenance
Engage consultants to develop carbon reduction plan that can be used inform scopes of refurbishment works and day to day maintenance	12 months	Operations Director

Commitments

All projects from 2024 will embrace the principle of embodied carbon reduction potential

6.5 College travel action plan

As with all areas of this roadmap, developing an action plan around travel and transport requires an understanding of what can reasonably be included in any policies or actions, and the unintended consequences of such policies and actions on other areas of life at St Catharine's.

Sustainable travel in the University of Cambridge

The University's travel and transport strategy focuses on travel to and within the University and its departments by staff and students, aiming to support sustainable modes of transport and to encourage staff to reduce the number of car journeys into Cambridge in order to improve congestion and minimise our environmental impact from transport. This includes working with local transport providers to improve public transport, improving cycling infrastructure and moving towards electrification of vehicle fleet, alongside prioritising parking for those most in need of it. For more information, see:

- <https://www.environment.admin.cam.ac.uk/travel#:~:text=The%20University%20wants%20to%20support,our%20environmental%20impact%20from%20transport>
- https://www.environment.admin.cam.ac.uk/files/university_of_cambridge_transport_strategy_2019-2024.pdf

NB This work does not cover the Cambridge colleges, and is concerned with travel to and within the University and its departments. Our own approach to sustainable travel will need to be more far reaching given the nature of our community.

Local and national context

There is currently a consultation taking place regarding plans for a Cambridge congestion charge, which is partly being considered to discourage car use and promote the use of public transport. Further information is here: <https://consultcambs.uk.engagementhq.com/making-connections-2022>

Scope

For the purposes of this action plan travel is broken down into the following categories:

- Travel by staff using one of our two vans
- Travel by students to and from Cambridge at the beginning and end of term
- Travel by students when in Cambridge
- Travel by students for which we give travel grants
- Travel by staff to and from work
- Travel by staff on St Catharine's business
- Travel by Fellows on St Catharine's business
- Travel by Fellows (who are primarily employed by St Catharine's) to and from work

We recognise that there could be other categories of travel e.g. visiting speakers / preachers to Chapel. Such categories will be addressed in a later version of this plan.

Unintended consequences

St Catharine's is committed to being an inclusive community, upholding excellence, diversity and equality of opportunity for all members. In delivering this roadmap, it will be essential to recognise the different segments in our community and that we will need the support of all parts of our community if we are to succeed. We also recognise that climate change is a matter of global justice, and that actions to reduce emissions may have unintended consequences and disproportionately disadvantage particular groups or people. Therefore, this action plan breaks down how any planned actions are likely to affect different people within the St Catharine's community, and indeed, any impacts (intended or otherwise) on the College community's present and future diversity. We acknowledge that the current cost of living crisis may both exacerbate existing injustices and also provide an opportunity for St Catharine's to support members of its community in sustainable ways.

Action	Timeframe	Owner
Collect and collate data to define baseline for the categories of travel listed above: <ul style="list-style-type: none"> • Travel using one of our two vans 	12 months	GWG

<ul style="list-style-type: none"> • Travel by students to and from Cambridge at the beginning and end of term • Travel by students when in Cambridge • Travel by students for which we give travel grants • Travel by staff to and from work • Travel by staff on St Catharine's business • Travel by Fellows on St Catharine's business • Travel by Fellows (who are primarily employed by St Catharine's) to and from work 		
Transition to all St Catharine's vehicles being none fossil fuel based (we currently have two leased vehicles)	Complete	Head of Buildings and Maintenance
Enable charging of electric vehicles at St Catharine's -we currently have a charging point in the Fellows' car park and will have at St Chad's by October 2023. Further requirements to be reviewed	Ongoing	Head of Buildings and Maintenance
Encouraging greater use of bikes via: <ul style="list-style-type: none"> • Secure and sufficient bike parking • Cycle to work scheme • Provision of staff e-bike(s) for local St Catharine's business 	Ongoing	HR Manager, Head of Building and Maintenance, Operations Director
Set expectation that St Catharine's taxi journeys are only in electric vehicles (engage with our providers)	2025	GWG
Develop plan to enable and incentivise more sustainable commuting for staff and fellows, to consider e.g.: <ul style="list-style-type: none"> • Car sharing • Flexible timings to encourage public transport use • Accessibility of electric cars 	2024	HR manager
Develop sustainable travel policy for travel paid for by St Catharine's, to include consideration of: <ul style="list-style-type: none"> • St Catharine's business • Student travel grants 	2024	GWG
Develop and implement plan to reduce emissions associated with student commuting, including establishing baseline and incentivising alternative methods of transport where possible	2 years to develop plan and define targets	GWG

Commitments

All St Catharine's vehicles to be electric by 2023

Sustainable travel policy to be developed for all St Catharine's funded travel by 2024

Plan to be developed to enable and incentivise more sustainable commuting by 2024

Plan to be developed to enable and incentivise reduced emissions associated with student commuting by 2025

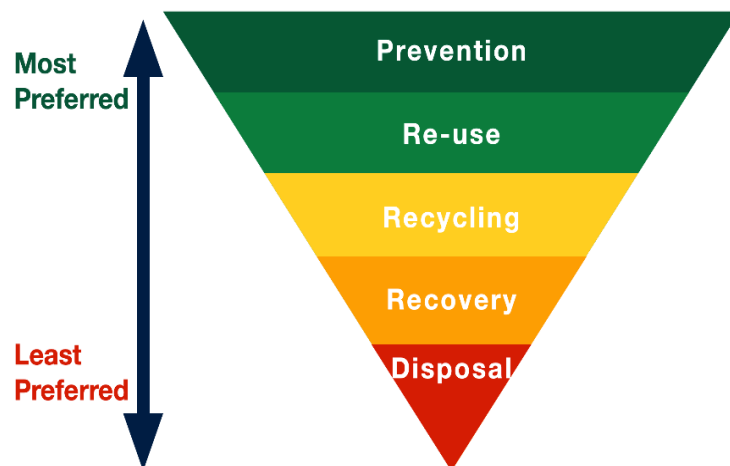
6.6 Waste reduction action plan

Half of the waste in the world isn't collected, treated or safely disposed of. While developed countries such as the UK have relatively good waste management practices, recent events have exposed the interconnected nature of global waste markets, and the reliance on developing countries as a destination for recyclable waste. Meanwhile unsustainable levels of resource consumption and disposal threaten the ability of the world to manage its resources in a way which is both in keeping with the delivery of the Sustainable Development Goals (SDGs), and which prevents far-reaching and lasting effects on global ecosystems, in particular the oceans.

This action plan will support St Catharine's to nurture a change in culture to enable us to align our activities with the waste hierarchy shown below.

Guiding principles

The main principles behind St Catharine's management of waste should be based on the well-established Waste Hierarchy. This has become a cornerstone of sustainable waste management practices, setting out the order in which waste management. Measures should be prioritised based on environmental impact.



We need to ensure that progress on waste management is continuous, and focussed on reducing our general waste output, whilst increasing the proportion of our waste that is going to be reused, recycled and recovered, including consideration of composting and our anaerobic digester.

Our goal is to change the makeup of our waste based on the waste hierarchy; reducing the waste generated, increasing the percentage of waste that is reused and recycled and reducing the percentage of waste that is disposed of.

The table below begins with an overarching action to document and understand our waste streams and how we might move them up the waste hierarchy and then includes some specific actions in areas where we already have a greater understanding of what needs to be done.

Action	Timeframe	Owner
Prepare and publish report on the main waste streams that considers origin of waste, current treatment with respect to the waste hierarchy and proposals to	12 months	Catering and Conference Director

move waste streams up the waste hierarchy		
Stop use of single use plastics (plates, trays, bowls, cutlery, balloon sticks, and certain types of polystyrene cups and food containers).	No later than October 2023 (legal requirement)	Catering and Conference Director
Develop and implement charging mechanism for single use takeaway containers (cups and cartons), including supporting provision of re-usable alternatives	By Michaelmas 2023	Catering and Conference Director, in consultation with JCR, MCR, staff and Fellows
JCR to review stash to ensure what is offered is well-used and not discarded	By Michaelmas 2023	JCR
Housekeeping to review provision in student gyp rooms / kitchens and propose more sustainable alternative	By Michaelmas 2023	Housekeeping Manager, JCR and MCR
Develop and implement method for measuring food waste	By Michaelmas 2023	Catering and Conference Director
Measure food waste and demonstrate year on year reduction (50% year on year until it is no more than a maximum of 10%)	Annually	Catering and Conference Director
Review and update recycling processes and provisions	January 2024	Catering and Conference Director
Raise awareness of updated waste management practices at St Catharine's among staff, students, visitors and other stakeholders.	2024	Communications Manager
Develop / refine plans for student swaps and sharing e.g. kitchen equipment	Michaelmas 2024	JCR
Includes section in Freshers Handbook and provide refresher comms to current students on "Think twice before you pack"	Michaelmas 2023	Communication Manager with input from Heads of Department
Review waste suppliers and consider use of newly appointed University Suppliers for whom sustainability was a key criteria during the procurement process	2024	Operations Director
Develop culture of reducing waste on an individual level – buy less new.	Ongoing	GWG

Commitments

To understand our waste streams and have a plan for reducing them by December 2024

To reduce food waste by 50% year on year until it is a maximum of 10%

To stop using single use plastics (as required by law) by October 2023 and introduce charge for other single use containers in order to reduce use

6.7 Investments action plan

Guiding principles

As trustees of St Catharine's, the primary fiduciary responsibility of the Master and Fellows is to maximise the financial return from investments, taking into account the amount of acceptable risk, in accordance with [this investment policy](#). However, there are circumstances, described in Charity Commission guidance and founded in judicial decisions, when the College may balance ethical considerations against its primary fiduciary responsibility.

It is the College's policy to take account of ethical and other issues of social responsibility and the values of the Collegiate University when taking investment decisions. This includes consideration of the theory of universal ownership when working to address climate change as one of the biggest challenges humanity has ever faced and targeting net zero for St Catharine's by 2040. The College aims to achieve net zero greenhouse gas emissions from its investments by 2040 and for new property leases to incorporate our net zero ambitions.

Financial investments

The College does not and will not hold any direct investments in fossil fuels. The College invests primarily through funds and will utilize environmental, social and governance (ESG) screening to select funds, including emissions intensity and absolute emissions.

The College's policy is to hire investment managers with ambitious shareholder engagement goals, including those that combine divestment and engagement to good effect. The College's default position expects managers to vote in favour of all environmental and social shareholder resolutions, and to vote against:

- The re-election of directors of non-compliant companies
- Excessive executive remuneration packages and/or executive remuneration packages that do not incorporate social and environmental metrics

Investment managers who do not align with these guidelines will be asked to explain any deviations, and the College will terminate relationships with investment managers whose voting practices continue to misalign with the guidelines.

Currently the College's funds are managed by CCLA Investment Management and Legal & General Investment Management (LGIM).

CCLA's COIF Charities Ethical Investment Fund is managed in accordance with an ethical investment policy that is set through consultation with unitholders. This requires CCLA to dedicate capital to positive investments, engage with companies to achieve positive changes in business practice and implement a range of restrictions including no investment in electrical utilities that are not aligned with the Paris Agreement, any companies primarily focussed on oil sands/coal extraction or fossil fuel extraction. The energy sector allocation within this fund is 0% except 1.8% committed to renewables.

The majority of the equity holding managed by LGIM is in the Future World ESG Developed Index Fund which excludes coal and perennial offenders of the UN Global Compact. It is tilted towards companies that demonstrate good environmental, social and governance efforts in developed countries. The fund has lower carbon reserves intensity and carbon emissions intensity than its benchmark and follows LGIM's Climate Impact Pledge, an engagement campaign to address climate change with targeted voting and investment sanctions. The energy sector allocation within this fund is 0%.

Property investments

The College's real estate investment managers, currently the Charity Property Fund and the Property Investment Trust for Charities, should adhere to best practice in environmental sustainability, social equity and responsible corporate governance including participation in the Global Real Estate Sustainability Benchmark survey (GRESB). Directly held commercial property is also expected to meet the 2040 net zero greenhouse gas emissions and the College will incorporate into new property leases its expectation that tenants will support this ambition.

The College's agricultural land, currently one holding, should be managed to maximise long-term soil health (and therefore carbon sequestration and food production over time) and biodiversity. To achieve this, the College will incorporate into any future tenancy agreement its expectation that prospective farm tenants ensure the following:

- No-till or minimum-till practices to increase soil quality and improve carbon sequestration in the soil
- The use of cover crops to minimise soil erosion throughout the winter
- Minimisation or elimination of the use of inputs such as chemical fertilisers
- Maximisation of biodiversity through expanded hedgerows, afforestation or rewilding of low-productivity farmland, and protection of waterways

Banking

The College expects its bank to align with the College's social and environmental policies. The College will engage with its bank – currently Barclays – on fossil fuel lending and will aim to switch providers if the bank's activities continue to run counter to the College's values. The JCR and MCR have separate bank accounts to the College and have taken an active lead in engaging with Barclays and seeking a viable alternative provider.

The College's policy is to place short term cash deposits with other institutions (currently LGIM) who have ambitious engagement goals on climate change.

Action	Timeframe	Owner
Financial investments		
Require investment managers to demonstrate how they will support us in achieving net zero greenhouse gas emissions from our investments by 2040 including close review of the definition of ESG standards	Annually	Bursar, Investments Committee
Require investment managers to report on their ESG voting record and Bursar to report on this point to the Green Working Group	Annually	Bursar, Investments Committee
Complete triannual review of investment manager performance including ESG as a criteria alongside financial return	Triannual – next due in 2024	Bursar, Investments Committee
Utilise ESG screening to select funds, including emissions intensity and absolute emissions	Ongoing	Bursar, Investments Committee
Consider opportunities for positive investment in asset classes such as renewables provided that such investments provide additionality ¹	Ongoing	Bursar, Investments Committee
Property investments		
Require investment managers to demonstrate how they will support us in achieving net zero greenhouse gas emissions from our investments by 2040	Ongoing	Bursar, Investments Committee
Utilise ESG screening to select funds, including emissions intensity and absolute emissions	Ongoing	Bursar, Investments Committee
For directly held property, ensure that:		
• new property leases incorporate our net zero ambitions	At each lease event	Bursar, Investments Committee
• landlord refurbishments support progress towards net zero by 2040	At each refurbishment	Bursar, Investments Committee
Total portfolio		
Investigate how to measure the carbon intensity of the portfolio and progress towards net zero by 2040	2024 – alongside triannual review of financial investment managers	Bursar, Investment Managers

¹ Any positive investment practices should exclude public equity as, without additionally, positive investment is ineffective.

Banking		
Continue to participate in the collegiate university engagement with Barclays to stop their lending to new fossil fuel extraction projects, investigating alternative providers	Ongoing	Bursar
Engage with LGIM individually or collectively with the collegiate university to provide Future World or Fossil Free products for short term deposits	Ongoing	Bursar

Commitments

To achieve net zero greenhouse gas emissions from its investments by 2040

For new property leases to incorporate our net zero ambitions

Banking providers and products to align with the College's social and environmental policies

6.8 Community engagement and communication action plan

Effective community engagement and communications will be essential in enabling St Catharine's to achieve net zero by 2040. We require our students, staff, Fellows and alumni to work together and with the wider community to identify obstacles and embed appropriate solutions to help the College to realise the ambitious targets we have set ourselves in the preceding action plans.

Learning and teaching have been recognised by the European University Association as a powerful way to foster student, teacher and institutional engagement with environmental sustainability.² The European Commission has recently published a recommendation that this education comprises 'hands-on, engaging and action-based ways of learning which foster (i) knowledge, understanding and critical thinking (cognitive learning); (ii) practical skills development (applied learning); and (iii) empathy, solidarity and caring for nature (socioemotional learning)'³.

St Catharine's is committed to being an inclusive community, upholding excellence, diversity and equality of opportunity for all members. In delivering this roadmap, it will be essential to recognise the different segments in our community and that we will need the support of all parts of our community if we are to succeed. This action plan breaks down how planned engagement and communications activities will address the needs of these different groups, including but not limited to:

Group	Current status	Desired status
Specialists	I have an established academic or professional interest in carbon emissions and related topics	I think the College's approach makes sense and feel my contributions to this agenda are valued and celebrated
Activists	I am proactive in learning about carbon emissions and advocating for improvements	I feel able to engage with/challenge the College to make improvements and know which channels are available to me to propose changes, and I show my support for the College's collaborative approach because this instils confidence in initiatives and ultimately helps us arrive at better solutions
The majority/mainstream of our community	I feel unfamiliar and uncertain about engaging with aspects of this roadmap, and carbon emissions isn't a priority in my day-to-day life	I am supportive of the College's approach and feel the College provides a safe space to learn more and get involved in the journey to net zero

The College is aware that the climate emergency, environmental crisis and sustainability can cause anxiety across all the groups described above. Without careful consideration, this could prevent our community from engaging with the College's journey to net zero. We will encourage a learning mind-set by using non-alarmist and empowering language that emphasises community responsibility (rather than putting the burden primarily on individuals). We will welcome diverse views on all aspects of this plan and ensure that debate and complexity are fostered in educating our community. We will present information clearly and concisely, and provide opportunities to engage throughout the year rather than overwhelming audiences. We will ensure that support is available for climate anxiety through the College's Health & Wellbeing Team.

Targets

Awareness	<ul style="list-style-type: none"> By 2025, our annual survey of students, staff and Fellows demonstrates that on average 85% of respondents can recall our net zero target
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² European University Association. Learning for environmental sustainability: European Commission proposes Council recommendation. 27 January 2022. Available online: <https://eua.eu/news/811:learning-for-environmental-sustainability-european-commission-proposes-council-recommendation.html>

³ European Commission. Proposal for a Council Recommendation on learning for environmental sustainability. 13 January 2022. Available online: <https://education.ec.europa.eu/document/proposal-for-a-council-recommendation-on-learning-for-environmental-sustainability>

	<ul style="list-style-type: none"> By 2030, our annual survey of students, staff and Fellows demonstrates that on average 95% of respondents can recall our net zero target and 85% can recall at least two other supporting targets from this roadmap
Engagement	<ul style="list-style-type: none"> An opinion survey of the St Catharine's community tracks participation and group identification/status against the three groups described above

<i>Action</i>	<i>Inform, engage & inspire the mainstream</i>	<i>Support & nurture our activists</i>	<i>Celebrate our specialists</i>	<i>Timeframe</i>	<i>Owner(s)</i>
Short term priorities (2023–24)					
Establish termly Green Working Group surgeries so students, staff and Fellows can share challenges and ideas	✓	✓		2023–24	Chair of the Green Working Group
Provide accurate and accessible information about the publication of the roadmap on the College's website and social media	✓	✓		2023–24	Communications Manager
Provide accurate and accessible information about this roadmap around the College's estate, especially where digital signage can be refreshed with updates on our progress	✓	✓		2023–24	Communications Manager
Develop messaging guide for Green Working Group to use when sharing its activities	✓	✓	✓	2023–24	Communications Manager
Explore Carbon Literacy training and delivery models that would be most appropriate for our community	✓	✓		2023–24	HR Manager & Environment Fellow
Present Carbon Literacy training recommendations and budget implications to the Green Working Group for consideration and agreement	✓	✓		2023–24	HR Manager & Environment Fellow
Update eligibility criteria for existing bursary support so students can apply to pursue extra-curricular learning opportunities about reducing carbon emissions	✓	✓		2023–24	Tutorial Office
Develop a crowd-sourced digital Sustainability Guide for students to raise awareness of good practice examples	✓	✓		2023–24	JCR Environmental & Ethical Officers and MCR Green Officer
Develop guidance on how to engage in conversations about carbon emissions with others as part of the Sustainability Guide (to avoid judgement and condemnation)		✓		2023–24	JCR Environmental & Ethical Officers, MCR Green Officer &

					student welfare officers
Develop and publish an online dashboard or similar summary that visualises our progress against the different targets included in this roadmap	✓	✓		2023–24	Communications Manager
Design an eye-catching motif/icon that can be used across materials about this roadmap and supporting activities	✓	✓		2023–24	Communications Manager
Incorporate information about this roadmap and accompanying action plans as part of inductions for new students	✓			2023–24	JCR Environmental & Ethical Officers and MCR Green Officer
Incorporate information about this roadmap and accompanying action plans as part of inductions for new staff so they are clear about its purpose and relevance to their roles	✓			2023–24	HR Manager
Incorporate information about this roadmap and accompanying action plans as part of inductions for new Fellows	✓			2023–24	EA to the Master
Incorporate an introduction to this roadmap and its purpose as part of the College's prospectus for potential undergraduate and postgraduate applicants	✓	✓		2023–24	Communications Manager
Establish and secure budget for an annual guest lecture series to inspire students, staff and Fellows, featuring engaging non-specialists among our famous alumni sharing how they reduce emissions in their lives and professions, e.g. Richard Ayoade's well-known use of Brompton Bikes, and alternative perspectives from non-University community leaders in Cambridge	✓			2023–24 onwards	Environment Fellow & Communications Manager
Review (updating if necessary) the JCR and MCR Terms of Reference to ensure appropriate student representation to support the roadmap	✓	✓		2023–24	JCR Environmental & Ethical Officers and MCR Green Officer
Agree how to recognise and reward students, staff and Fellows engaging in achieving our net zero goal	✓	✓	✓	2023–24	Green Working Group
Collate and review the survey requirements of all action plans,	✓	✓	✓	2023–24	Green Working Group

agreeing when and how this should be delivered to ensure this roadmap will be successful					
Recurring priorities					
Prepare and deliver surveys of students, staff and Fellows in line with the Green Working Group's agreed above (reviewing approach as needed)	✓	✓	✓	Ongoing	Communications Manager
Identify the five most important actions to achieving our goals and the five actions that will most effectively convey change/engage our audiences	✓	✓		Every 2–3 years	Green Working Group
Connect communications activities to the agreed five actions that will most effectively convey change/engage our audiences	✓	✓		Ongoing	Communications Manager
Raise awareness of the students, staff and Fellows on the Green Working Group so that they can support others in our community seeking advice on how to get involved	✓	✓	✓	Annually as membership changes	Communications Manager
Review the name and terms of reference for the Green Working Group to ensure meaningful engagement and communication with all parts of the St Catharine's community	✓	✓		Annually	Chair of the Green Working Group
Update online dashboard or similar summary that visualises our progress against the different targets included in this roadmap	✓	✓		Annually	Communications Manager
Summarise progress (and signpost to the new dashboard once available) as part of publications such as the Trustees' Report & Annual Accounts, The Wheel newsletter and the College Report in the St Catharine's Magazine	✓			Annually	Communications Manager
Identify and record successes and internal good practice examples	✓	✓	✓	Ongoing	Green Working Group
Share and celebrate successes and internal good practice examples through existing communications channels	✓	✓	✓	Ongoing	Communications Manager
Plan speakers and materials on the College's journey to net zero for alumni and development events, e.g. reunions, Ramsden Dinner, 1473 Dinner	✓	✓	✓	Ongoing	Development Director

Refresh and republish the Sustainability Guide on a regular basis	✓			Ongoing	JCR Environmental & Ethical Officers and MCR Green Officer
Oversee the delivery of regular training based on Green Working Group agreement	✓	✓		Annually	HR Manager & Environment Fellow
Plan a programme of activities for Green Week(s) and World Environment Day(s) to optimise community engagement, including opportunities to input (e.g. taste tests) and discuss (e.g. events using the world café method)	✓	✓	✓	Annually	Green Working Group
Work with counterparts across the University to establish learning for environmental sustainability as a priority area in curricula	✓			Ongoing	Senior Tutor via Senior Tutors' Committee, Fellows via Departments
Work with the Cambridge Green Challenge team to maintain a list of local organisations offering extra-curricular hands-on learning/volunteering experiences relevant to reducing carbon emissions, refreshing this list as required	✓	✓		Annually	JCR Environmental & Ethical Officers and MCR Green Officer
Ensure the existing MCR-led Graduates' and Fellows' Seminar series dedicates at least one seminar each year to topics relevant to this roadmap			✓	Annually	MCR Green Officer & MCR Education Officer
Encourage College Societies to provide forums for non-specialists to share essays/research projects/years abroad relevant to this roadmap	✓	✓		Ongoing	JCR Environmental & Ethical Officers and MCR Green Officer
Schedule regular speakers for Chapel services about faith and sustainability themes, including reducing emissions	✓			Annually	Chaplain
Reviewing best practice and if necessary expand/update the College's health and wellbeing strategies to address, for example, climate anxiety, climate activism, eating habits and veganism	✓	✓		Biennially	Health & Wellbeing Team & student welfare officers
Include welfare-related activity as part of Green Weeks	✓	✓		Ongoing	Health & Wellbeing & student welfare officers
Consider citizen science projects to engage non-specialists in	✓	✓		Ongoing	Green Working Group

tracking our progress, e.g. a project on student travel habits over time					
Review, evaluate and refresh this action plan	✓	✓	✓	Biennially	Communications Manager with Green Working Group

Commitments

By 2025, our annual survey of students, staff and Fellows demonstrates that on average 85% of respondents can recall our net zero target

By 2030, our annual survey of students, staff and Fellows demonstrates that on average 95% of respondents can recall our net zero target and 85% can recall at least two other supporting targets from this roadmap

An opinion survey of the St Catharine's community will track participation and group identification/status against the three groups described in the action plan

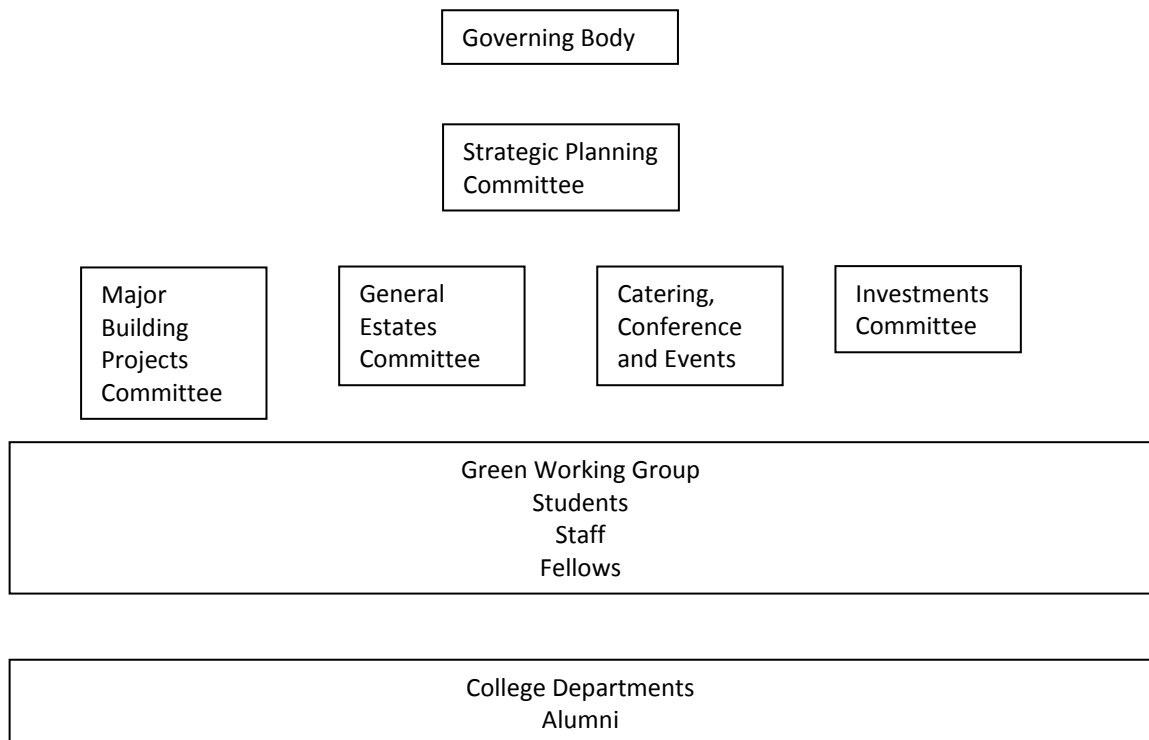
7 Governance and organisation structure

The Governing Body is responsible for the long term future of the College. This means responsibility for both the footprint of our emissions (the quantity of emissions we create, directly and indirectly) and also the handprint (the positive things we do to reduce our footprint). The Governing Body should balance leading our response to the net zero challenge with empowering the St Catharine's community to take the initiative.

Strategic governance: The Strategic Planning Committee is responsible for ensuring we have a coherent strategy to work to, and which the Governing Body approves. This Committee should oversee, and approve, our high level aspirations with respect to our response to Climate Change.

Operational governance: The General Estates Committee, into which the Green Working Group reports, is responsible for day to day monitoring and progress reporting. Other Committees, such as Catering Conference and Events, will be called upon for detailed reviews and implementation of actions.

Community engagement and empowerment occurs via our departments responsible for the day to day running of St Catharine's operations (staff), our alumni and development office (alumni), our JCR and MCR (committees and wider student bodies) and the Green Working Group.



8 Conclusion and next steps

This document represents the initial version of our roadmap to net zero carbon emissions. Priority areas for action, and commitments have been identified.

The actions should be assigned, and progress monitored and reported, to relevant committees based on the responsibilities described within the section of this plan relating to governance and organisation.

Appendix A: St Catharine's College Environmental Sustainability Strategy (February 2022)

What is environmental sustainability?

Environmental sustainability means avoiding the damage and exploitation of our environment so that future generations and natural populations are able to thrive. There is growing recognition that it is impossible to separate environmental sustainability from commitments to social sustainability and equality.

Background

St Catharine's College is proud of our community's expertise and commitment to advancing environmental sustainability, through world-class research that advances policy and academic discourse, and tireless efforts going on behind the scenes to improve how the College operates. [Read more about some of this recent activity.](#)

We also welcome the University of Cambridge's commitment to making a positive impact through outstanding environmental sustainability performance, as set out in its ['Environmental Sustainability Vision, Policy and Strategy'](#).

Our vision

Humans and the natural world are intimately connected: our actions affect the wellbeing of non-human organisms, and these organisms contribute to a healthy, meaningful life for us all. We do not want to compromise these ecological systems or deplete the world of its natural resources. We want future generations to inherit an environment that is healthier and more biodiverse.

Our commitment

Recognising that climate change as one of the biggest challenges that humanity has ever faced, St Catharine's will reduce the environmental impact of the College community (decreasing our footprint), while harnessing the positive influence of our students, staff, Fellows and alumni to encourage and support other communities to take action (expanding our handprint).

Focus areas

- Energy consumption
- Resource and waste management
- Biodiversity and ecosystems
- Water use
- Generation and application of knowledge
- Alumni with sustainability skills, knowledge and understanding

Goals

- To achieve carbon-equivalent net-zero status by 2040.
- To identify other measurable and ambitious objectives encompassing our community's operations, individual behaviours and our influence on wider society across our focus areas (see above).
- To produce, release in the public domain and implement roadmaps that are focused and actionable to ensure we achieve our objectives.

Guiding principles

- **Engagement:** Community engagement and support will determine the success of this strategy, since our handprint and footprint involve change in practice and culture across all facets of college life. Each of our action plans will need to address the collaboration and behaviour change necessary.
- **Connectivity:** St Catharine's is connected to other groups and communities working to similar goals, so we will seek out, learn from and share successes.
- **Accountability:** All members of the St Catharine's community are accountable to one another for addressing the College's environmental sustainability. In addition, the Green Working Group is accountable for its activities to Governing Body, via the General Estates Committee, and will ensure there

are identified owners for any activities. It is acknowledged that there will need to be close working between the Green Working Group and colleagues on the Equality, Diversity & Inclusion Working Group.

- **Focus:** Our community has a finite amount of time and resources to achieve our goals and we will need to navigate a plethora of ways to address the threat of climate change and ensure the greatest positive impact.
- **Tenacity:** Meaningful progress will take time and require the St Catharine's community to sustain momentum year-on-year – regardless of changing personnel, student elections and other potential disruptions – and to brave changes that might feel uncomfortable.

Appendix B: Direct and indirect greenhouse gas emissions

In defining our scope we are including all greenhouse gas (GHG) emissions generated by the actions of St Catharine's College. This means emissions produced inside our physical boundaries, and also those produced as a result of St Catharine's activities e.g. travel to and from the College and agricultural emissions related to food consumed at St Catharine's.

There are standardised guidelines for accounting for GHGs, presented in the GHG protocol (A Corporate Accounting and Reporting Standard, revised edition, World Business Council for Sustainable Development and World Resources Institute). These guidelines categorise emissions into three scopes:

Scope 1: Direct GHG emissions occur from sources that are owned or controlled by the College, for example, emissions from combustion in owned or controlled boilers, furnaces, vehicles, etc. (Direct CO₂ emissions from the combustion of biomass shall not be included in scope 1 but reported separately. GHG emissions not covered by the Kyoto Protocol, e.g. CFCs, NO_x, etc. shall not be included in scope 1 but may be reported separately).

Examples of scope 1 emissions for St Catharine's include:

- Natural gas (heating);
- Petrol and Diesel ('Fleet' vehicle); and
- Fugitive emissions (fluorinated gases, typically found in air conditioning, cooling, and refrigeration systems).

Scope 2: Indirect GHG emissions from the generation of purchased electricity consumed by the College. Purchased electricity is defined as electricity that is purchased or otherwise brought into the organizational boundary of the company. Scope 2 emissions physically occur at the facility where electricity is generated.

Examples of scope 2 emissions for St Catharine's include:

- Grid-supplied electricity (power, and electrical heating where applicable); and

Scope 3: Other indirect GHG emissions occurring as a consequence of the activities of the College, but from sources not owned or controlled by the College.

Examples of scope 3 emissions for St Catharine's include:

- Purchased goods and services (e.g. food)
- Transportation and distribution
- Waste disposal
- Buildings
- College travel (students, staff and Fellows), including commuting
- Leased assets
- Investments