Bournemouth University

Climate and Ecological Crisis Action Plan (CECAP)

For a vibrant, transformative and resilient university

Version control

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Vision

Our net zero vision is a BU community that recognises the need to live in harmony with the natural world to protect the survival and wellbeing of all communities and takes action to enrich society for the benefit of people and planet.

1. Introduction

In BU2025, we are clear that BU is a catalyst for sustainable social, environmental and economic growth and development. We lead thinking on sustainability and support the development of the region and, beyond that, we enrich society by having a significant impact on challenges worldwide which are set out in the United Nations Sustainable Development Goals (SDGs)[1].

We, as a BU community have a set of shared values (Responsibility, Inclusivity, Creativity, and Excellence), as described in BU2025[2], and this Action Plan is based on and driven by these. We have previously established some of these values in our previous Carbon Management Plans, but now identify them at the core of our action. Our values within this CECAP, therefore, are as follows:

Figure 1: BU2025 values interpreted for the CECAP

The climate and ecological crisis is the major negative environmental, social and economic impacts caused by human exploitation of the natural world. The CECAP is BU's response to mitigate and adapt to these impacts.

[1] Refer to Appendix 1: United Nations Sustainable Development Goals (SDGs) more on SDGs.

[2] https://www.bournemouth.ac.uk/about/bu2025-vision-values-strategic-plan/our-values

In response to climate change, BU has committed to becoming a net zero emissions[3] organisation by AY2030/31. We also recognise the need to urgently respond to the ecological crisis and do what we can to support the recovery of the natural world to the benefit of all.

These issues are most effectively tackled together and this Climate and Ecological Crisis Action Plan (CECAP) builds on the previous iterations of our Carbon Management Plans and expands the scope by presenting our first response to a more comprehensive range of global challenges.

The aim of the plan is to set out the context of the crisis, and the role BU plays in a positive response to it by showing how we can respond with commitment, playing our full part in the transition to a sustainable world that lives more in harmony with nature.

Although the plan majors on climate change mitigation across all aspects of University activity (i.e. the reduction of greenhouse gas emissions with the intent of avoiding the worst impacts of climate change), it recognises the strong interplay between that, the global ecological crisis, and the broader sustainability agenda as defined by the SDGs.

The plan is divided into the following main areas:

Sections 1 and 2 provide context for the CECAP, the approach we are taking in our response to the climate and ecological crisis, the key themes of the response, and a series of over-arching objectives to be used as touchpoints as we move toward a net zero emissions future.

Section 3 considers the baseline against which future action to reduce emissions is to be judged and future reporting of emissions.

Sections 4, 5 and 6 explore the net zero emissions target and the two strands of our response; decarbonisation and offsetting.

Section 7 and 8 present future forecasts of emissions under Business As Usual scenarios and a number of carbon reduction scenarios.

Sections 9 considers various aspects of implementing the CECAP.

Appendices provide detail in a range of areas and are presented in a separate CECAP appendices document.

1.1 Global context

Climate change is recognised as the most important issue facing our planet today. In October 2018 the IPCC report spelt out the need for urgent action to reduce carbon emissions as pledged in the Paris agreement to keep increases in average global temperatures between 1.5^{o}C and 2^{o}C. Climate change is expected to result in an increase in severe weather disruption and there are signs of this impact now.

Linked to the issue of climate change and mankind's demonstrably irrepressible habit for consumption, the natural world is facing massive challenges - Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)[4], are clear that biodiversity is declining worldwide with the biosphere on which we rely, entirely, being altered to an unparalleled degree at all scales, and biodiversity declining faster than at any time in human history. They also say that goals to conserve nature and use it sustainably cannot be met by current trajectories.

It is clear that, if we want the world to continue to support human existence in something resembling its current form, we must radically, and rapidly, change the way we treat it.

The SDGs encapsulate these issues in several of the seventeen goals as well as identifying other sustainability challenges which are all impacted by the crises; we must take responsibility to ensure our action supports all of the SDGs effectively and holistically.

[3] Net zero emissions encompasses all greenhouse gases (GHGs).

[4] https://ipbes.net/sites/default/files/2020-02/ipbes_global_assessment_report_summary_for_policymakers_en.pdf

1.2 National and regional context

In June 2019, the UK Government adopted a binding legal target to achieve net zero greenhouse gas emissions by 2050 (including an 80% reduction in emissions based on 1990 baseline) based on the recommendation of the Climate Change Committee (CCC)[5]. The CCC report stated that a transition to a near zero carbon economy is now technically achievable, recognising the scale of the change to be enormous and the need for it to happen at remarkable speed across all sectors.

Making progress on climate change requires the three key groups of players - government, businesses and individuals to work together, rather than waiting for the other two to act first[6]. This study identified the changes needed by these players to achieve absolute zero emissions including incrementally improving existing technologies and a significant change in behaviours.

Additionally, and in line with global trends, nature in the UK is also facing unprecedented challenges; the 2019 State of Nature report published by RSPB indicates that just under half of species abundance decline since 1970 has occurred in the last 10 years[7]. The report also confirms that the UK Government's own assessment indicates that, although progress has been made, the UK will not meet most of the global 2020 targets it committed to through the Convention on Biological Diversity.

Work by Stafford et al[8] showed there are two clear strategies to address these combined environmental threats.

The first of these is the adoption of nature-based solutions, which encompasses the regeneration and proper care of a range of carbon sequestering habitats which also provide a host of other ecosystem services on which humankind depends.

The second is changes in national economic strategies, such as full implementation of the Green New Deal for Europe which has a broad focus including the removal of fossil fuel subsidies, increases in carbon tax, and removing the focus on economic growth.

Both require local, national and international collaboration to proceed.

1.3 Local and sectoral context

Both BCP and Dorset Councils have declared Climate Emergencies. BCP has set a target to achieve net zero emissions by 2030 for their own operations and for the conurbation by 2050 or earlier if possible.

The EAUC declared a Climate Emergency on 2nd May 2019 and asked HEIs to pledge to become net zero by 2050. Some Universities, notably Bristol and Newcastle, have declared Climate Emergencies with a target to achieve net zero emissions (Scopes 1 & 2) by 2030 and 2040, respectively. Other institutions have also declared zero carbon targets in various forms and by various dates, with still more in the process of developing such targets and securing the necessary internal backing to take significant action on carbon reduction and biodiversity loss.

1.4 BU context

Our strategic vision for BU is set out in BU2025 and includes a commitment to enhance our position as a sustainable organisation and manage the environmental impact of our actions and this is supported by a number of outcomes and more specific actions around sustainability and the environment, including that we enrich society by having a significant impact on challenges worldwide, i.e. do our part to address the UN SDGs.

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[5] https://www.theccc.org.uk/publication/net-zero-the-uks-contribution-to-stopping-global-warming/

[6] Allwood J. et al. 2019 Absolute Zero.

[7] https://www.rspb.org.uk/globalassets/images/campaigning-and-positions/let-nature-sing/birdsong-takeover/pdf/sonr/rspb_state-of-nature_summary-report_uk.pdf

[8] https://theecologist.org/2020/apr/22/after-coronavirus The lead author of this research, Rick Stafford, is a professor of marine biology and conservation at BU.

This CECAP will show how the actions of the BU community can contribute to the national and global response to these challenges and so play their part in mitigating and adapting to climate change and biodiversity loss.

1.5 UNSDGs

The UN has set out 17 sustainable development goals which are the blueprint to achieving a better and more sustainable future for all. They address the global challenges we face, including those related to poverty, inequality, climate change, environmental degradation, peace and justice. The 17 Goals are all interconnected and the UN states that, in order to leave no one behind, it is important that we achieve them all by 2030.

SDG13 focuses on Climate Action (BU 3rd in UK (THE Impact Rankings, 2020) confirming our ongoing strong track record of addressing GHG emissions) and requires urgent action by all to combat climate change and its impacts while SDG's 14 and 15 set out to conserve and sustainably use our marine and terrestrial ecosystems respectively. SDG13 is particularly relevant as climate change has direct or indirect negative impacts across all of the SDGs and is most likely to disproportionately impact vulnerable groups and communities.

The SDG commitment of BU activity is also recognised in recent work to examine alignment between courses and the SDGs which found that 92% of programmes and 65% of research aligns with at least one of the SDGs.

1.6 Addressing the climate change and ecological crisis

This element of the CECAP is the third iteration of Bournemouth University's (BU) Carbon Management Plan (CMP); it is an evolution of the existing CMP and forms part of BU's Environmental and Energy Management System (EEMS).

ULT (October 2019) and the Board (February 2020) have approved in principle the adoption of a net zero target by 2030/31 and there are good reasons for BU to adopt such a target. These are described in a PESTLE analysis in Appendix 2: PESTLE analysis. As might be expected, there are both risks and opportunities across all the PESTLE factors of Political, Economic, Social, Technological, Legal, and Environmental which suggest that we should take immediate and decisive action.

This plan majors on this aspect of our response to the crisis, providing a significant amount of detail on the context, current situation, historic progress, and future plans for a transition to net zero emissions.

Alongside mitigation, BU must be ready for the impacts of climate change which are already happening and will continue to affect our lives for years to come. We must be resilient to short term climatic shocks such as storm events of greater frequency and intensity and more frequent heat waves. We must also be able to adapt to longer term stresses such as rising temperatures and increased water scarcity. Finally, we must recognise the financial risk associated with not addressing climate change and see our response as an effective means to mitigate that risk.

Although BU has a Biodiversity Group and Action Plan to maintain and enhance the grounds for people and wildlife, for some years, our response to the ecological element of the crisis needs to be developed and will form a future update to the CECAP, however, we present initial thoughts on this issue in Section 2.2, below.

2. Approach

Although, due to its primary focus on the reduction of carbon emissions, much of this plan is necessarily technical in nature, here we discuss four key factors which, beyond technical fixes, will be fundamental if we are to successfully address the climate and ecological crisis:

- **People**: Mobilising the entire BU community to support our efforts will greatly enhance our chances of success which we define as BU having a significantly reduced impact on the climate and ecological crisis.
- **Nature:** Recognising and reinforcing the link between people, nature, and the climate will strengthen our response to the crisis and encourage engagement of the community.
- **Resources:** We must recognise that, over the next ten years, considerable resources will be required to successfully transition to net zero emissions and a position which works with nature.
- **Risk:** We must adequately mitigate climate change risk, which is both physical and financial to ensure we can successfully transition to a zero-carbon future and not be disadvantaged.

Each of these areas is discussed below and they are followed by a framework for action which sets out the headline objectives for the plan. The objectives should act as touch points over the period to 2030 to enable us to check-in on progress and ensure we are still heading in the right direction.

Later in the plan, we indicate how specific recommendations relate to one or more objectives.

2.1 People

We have set ourselves an ambitious target which will mean a great deal of work by those tasked with delivering it. It will also require the support and commitment of the entire staff and student body in recognising that the way we have worked in the past will need to change – the way we develop the estate will require the integration of nature-based solutions and an even greater focus on energy efficiency, the way we design programmes will need to consider lower impact approaches to teaching and ensure a focus on making our students better global citizens, the way research projects are designed will need to think about how we balance the sustainability impact of the work with wider benefits of the results, all while reducing our impact on the environment. The decisions taken every day will need to be made in awareness of the likely impact they will have to ensure that they enrich society, and we will need to meaningfully hold ourselves to account on the progress we make.

In short, mobilizing the support of our staff and students will be essential if we are to play our full part in tackling the climate and ecological crisis and meaningfully achieve our net zero emissions targets.

While changing the way we do things might be easier as a result of our experiences during the coronavirus pandemic, managing the messaging in an effective and considered way will be critical.

2.2 Nature

The rich variety of nature provides us with the food we eat, the water we drink and the air we breathe, as well as countless moments of personal inspiration spent in forests and mountains, exploring beaches and rivers, or even listening to a simple birdsong in a quiet moment. Many of these can be enjoyed on our doorstep – Dorset has a wealth of beautiful outdoor spaces for us all to explore, from the Dorset heathland, the Purbecks and the beaches of the Jurassic Coast, to the New Forest and the local Bourne Valley nature reserve. Together, these are just some of the ecosystem services that the natural environment provides (see Appendix 3: Ecosystem services).

It has been easy to assume that nature would always be here for us and our children, providing these services indefinitely, but the boundless consumption of most developed nations, short sighted reliance on fossil fuels, and our unsustainable use of natural resources now seriously threaten that assumption, and our future.

It is now clear we have entered an era of rapidly accelerating species extinction and are facing the irreversible loss of plant and animal species, habitats and vital crops, while coming face to face with the impacts of global climate change.

Degraded ecosystems are not capable of providing many services which are crucial for human life. The maintenance, restoration, and sustainable use of ecosystems form the basis of nature-based solutions (NBS) to climate change

mitigation and adaptation. When done well, NBS provide both environmental benefits and social and economic benefits to local people[9], such as:

- Providing the opportunity to enhance local biodiversity
- Contributing to the mitigation of climate change by capturing and storing carbon
- Supporting our adaptation to climate change by increasing BU's resilience to more intense rainfall, more frequent floods as well as heat waves and droughts.
- Providing opportunities for our staff and students to engage with nature while on campus

Helping staff and students to connect with nature; to learn to understand it, to respect it, and to love it, on campus and beyond supports mental and physical wellbeing. In addition, those with a higher appreciation of nature and those who spend more recreational time in natural settings are more likely to report engaging in a range of pro-environmental behaviours[10] which we must use every opportunity to encourage in order to achieve our net zero ambition.

Given the ability of NBS to support both the ecological and climate elements of our crisis response, our approach has four strands:

1. Cut consumption
   Reducing the consumption of products and services will both reduce resource consumption and lessen the worst impacts of climate change through mitigation of emissions.
2. Implementing NBS
   NBS both mitigate climate change through the capture of carbon and support adaption to the effects of climate change by, for instance, reducing the urban heat island effect.
3. Education and engagement
   By helping staff and students to connect with nature and understand their role in protecting and enhancing the natural world, we can promote pro-environmental behaviours and physical and mental health benefits.
4. Influencing others
   Through engagement with other bodies (such as Bournemouth, Christchurch, and Poole Council) BCP, government etc), and our research activity, advocate for and demonstrate the benefit of NBS so that they do the same.

We will continue to develop this element of our response with future iterations of the CECAP.

2.3 Resources

Achieving net zero emissions will require substantial financial resources; resources which may need to be made available at the expense of other activities. That's likely to mean that there will be some tough choices to be made in the years ahead and changes in the way we live, work, and conduct our business. This represents probably the biggest challenge of the net zero ambition as it will ask searching questions of our commitment to the target and, by extension, our values around the climate and ecological crisis.

There are also emerging requirements in the sector that utilising resources in a way that aligns with an effective response to the crisis will be critical – for example, in its proposed wording for terms and conditions for funding[11], the Office for Students states that "Providers must use capital funding in ways that will improve environmental sustainability, for example, in reducing carbon emissions.". This gives a clear indication of the direction of travel and supports the implementation of the CECAP.

We must continue our spend to save policy and ensure that we are able to demonstrate the benefits associated with how we have used the resources we have.

[9] https://ec.europa.eu/research/environment/index.cfm?pg=nbs

[10] https://www.sciencedirect.com/science/article/abs/pii/S0272494418308557

[11] https://www.officeforstudents.org.uk/media/9e4cd4ae-99bd-4b2e-851e-3be1f1a92920/proposed-changes-terms-and-conditions-of-funding-for-2020-21.pdf

2.4 Risk

We have recognised that we face a number of climate change risks and these are formally recorded in the Climate Change Risk Register (CCRR), which forms part of the EEMS. Effective management of these requires a re-examination of how BU currently manages risk and specifically those related to the environment.

BU has a corporate risk register underpinned by Faculty and Departmental registers (including the CCRR mentioned above). These registers are reviewed on a quarterly basis and are supported by a Risk Management Policy which sets out the responsibilities and framework for managing risk. Currently, the corporate risk register does not include climate change.

The Risk Management Toolkit explains the link between these registers and BU2025:

- Corporate Risk Register – key risks linked directly to the objectives in the University's Strategic Plan, Key Performance Indicators and underpinning strategies. Risks are categorised and organised according to the BU2025 plan headings of Fusion and Investment (F&I), Leadership and Impact (L&I), Reputation and Networks (R&N), People and Culture (P&C) and Performance and Resilience (P&R).
- Operational Risk Registers – risks identified at Faculty and Professional Service level (also categorised according to the BU2025 plan headings), arising both from the Faculty / Professional Service operating experience and from assessment of the impact of institutional risks in a local context.

A case for incorporating climate change into the Corporate Risk Register could be made as the risks link directly to the BU2025 plan headings and particularly Performance and Resilience.

The Environmental risk management framework is provided by the Environmental and Energy Management System certified to ISO14001:2015 which is externally audited every year. The standard requires BU to identify external environmental risks to the business, such as climate related extreme weather events, and this led to the development of the mitigation and adaptation measures in the Climate Change Risk Assessment. The CCRR also identifies opportunities as well as risks and the main items are now included in this CECAP.

In addition, we are implementing an integrated Environmental and Energy Management System to achieve certification to the energy management standard ISO50001:2018 by December 2020. This will focus efforts on reducing energy use and help manage the climate change mitigation risks.

2.4.1 Managing climate related financial risk

The Taskforce for Climate Related Financial Disclosures (TCFD) refers to climate-related transition (i.e. to a zero carbon future) risks as the financial or reputational risks that organisations face due to the policy, legal, technology, and market changes that occur as a result of societal efforts to mitigate and adapt to climate change[12].

Our current approach partly meets the requirements of the guidance by considering how the risks might affect our ability to do business from a qualitative perspective but falls short of providing a quantitative assessment of the risk. By quantifying the risks in the CCRR, they could more readily be considered alongside other risks and elevated to the corporate risk register (potentially collectively) where the significance of climate change could be appropriately recognised. This would also provide significant support for a range of governance related recommendations made later in the CECAP as TCFD includes a requirement for specific disclosures in this area.

We therefore recommend that we build on the CC Risk Register to quantify the risks and opportunities and to publish these as part of BU's annual financial reporting in line with TCFD guidance.

2.5 A framework for action

The CECAP builds on all the work to date including previous CMPs and the Travel Plan. It forms part of the Integrated Environment & Energy Management Systems (certified to ISO14001 & 50001) which provides the systematic approach

[12] https://www.fsb-tcfd.org/wp-content/uploads/2017/06/FINAL-2017-TCFD-Report-11052018.pdf

to deliver continual improvement. The CECAP sets out a broad framework for action captured in the following objectives.

Demonstrating sustainability leadership

If BU is to play its full part in addressing the climate and ecological crisis, it must commit to it and commit to it fully; this includes a clear understanding and acceptance of what actions are necessary and the resources required to support them. BU is a thought leader in sustainability (BU2025) and an unambiguous demonstration of that leadership will be needed to be credible, to have impact, and to take the whole BU community with us on the journey. CECAP is a value-driven plan which means that our decisions in relation to the crisis must not be made on, for example, financial criteria alone – we must ensure decisions align with our values. The plan sets out a vision of what the BU community need to do to deliver the net zero target and also establishes how the plan aligns with and supports the BU Values[13].

A fundamental part of demonstrating leadership here is to create appropriate and robust means to hold ourselves to account – this can take many forms such as an assurance process for leaders or a staff and student assembly.

Making the net zero target directly tangible for all staff should be supported by reviewing and adapting existing governance mechanisms, and, where necessary, establishing new ways to ensure everyone contributes appropriately.

Objective 1: Senior management will build the climate and ecological crisis into our governance structures and into the policy framework for all activities, and then commit to their implementation, even when facing challenges, such that choices supporting the other CECAP objectives are more, rather than less, likely.

Aligning education and research with our crisis response

Inspiring learning and advancing knowledge is at the core of what we do, and, as part of BU2025, we recognise the need to do it while enriching society through our response to the global challenges encompassed in the SDGs. This means it's essential that the way we deliver education and undertake research should align with and support our response to the climate and ecological crisis: providing our students, future leaders and innovators, with the information, skills, and wisdom to recognise the challenges and tackle them appropriately; and ensuring every one of our research projects aligns with at least one SDG so that we're maximising our positive impact on these global challenges.

In our recent survey of staff and students on the topic of the crisis, we found that around 83% of respondents felt knowledgeable about the crisis and over 90% agreed that BU has a responsibility to educate on it. 80.1% of staff and students indicated that all programmes should include climate change and 76% said that should be at all levels, but there was somewhat less support for incorporating the topic in all units (50%) and in assessments (45%). The vast majority of topics taught at BU can be examined through the lens of the crisis, but we need to support our staff with identifying how their programmes align and how to teach it in the context of their subject.

Over 75% of respondents were interested in opportunities to increase awareness, understanding, and literacy using a variety of approaches, such as online training and workshops, and developing a programme to address this need should inform our approach to communicating the CECAP.

Objective 2: BUs academic community to align education and research with our climate and ecological crisis response, in terms of appropriate programme content, research outcomes, and the way we operate, including increasing crisis awareness and literacy.

Implementing nature-based solutions

Alongside the beneficial effects for nature that will accrue from the various measures we will pursue to reduce and remove GHG emissions, the implementation of nature-based solutions (NBS) is also essential to mitigating and adapting to climate change[14].

[13] https://www.bournemouth.ac.uk/about/bu2025-vision-values-strategic-plan/bu2025-strategic-plan

[14] https://www.unglobalcompact.org/take-action/events/climate-action-summit-2019/nature-based-solutions

Although we do not have the extensive grounds of some universities, we should actively seek out opportunities to implement NBS across our estate where they exist as well as considering NBS as part of our approach to offsetting. We should work to instil a better-informed appreciation of nature in the BU community, both for its own intrinsic value and in terms of the various ecosystem services and health and wellbeing benefits it provides.

As with all the activities in the CECAP, identifying education and research opportunities on the role NBS in tackling the climate and ecological crisis should be encouraged.

Objective 3: Implement opportunities to create biodiversity net-gain on each of our sites, encourage the BU community to actively connect with nature, and prioritise nature-based solutions to technical issues especially those around climate change adaptation.

Reducing demand for carbon emitting activity through engagement and behaviour change
Undoubtedly, it will be critical to have the support of staff and students if we are to play our full part in mitigating the impacts of climate change and realising the net zero target in a meaningful way.

To achieve the aim of the BU community being more, rather than less, likely to make choices and act in ways that support our response to the crisis, this objective focuses on a continuation and enhancement of the excellent engagement activity through existing schemes such as Green Impact for students and Green Rewards for staff, and new activities such as a programme of carbon literacy.

This objective has two strands and, in recognition of the scale, urgency, and complexity of the task, they consider both appealing to individuals desire to support the CECAP, and the need to require people to act in a way that is commensurate with the challenge at hand. The latter is also captured in Objective 1 with the review and adaption of existing governance mechanisms.

Objective 4: To mobilise BU staff and students to actively support the goals of the CECAP by developing and implementing a range of inspiring and educational engagement activities.

Rapidly reduce energy consumption and associated emissions through technology solutions
Critical to maintaining a credible net zero emissions position is to make meaningful reductions in our own emissions before deciding to purchase offsets to enable a declaration of achieving net zero carbon. Referring to a science based target, we should aim to achieve emissions reductions of 50% by the end of 2030/31 against a 2018/19 baseline (refer to Section 4 for details). Achieving this target could follow a variety of pathways – some seeing emissions fall more quickly and some perhaps reducing emissions later in the period. Although the end goal is essential, of equal importance are the cumulative emissions produced between now and the target year.

For this reason, Objective 5 reflects the need to both reduce emissions as far as possible by (among other measures) continuing to implement energy efficiency projects, preparing to move away from natural gas for heat, and reducing emissions from business travel, before purchasing offsets to get to net zero carbon, and to ensure we stay as close as possible to a science-based trajectory over time.

Objective 5: To achieve a 50% reduction in emissions by the end of AY2030/31 against a 2018/19 baseline by maintaining a science-based decarbonisation trajectory, and better if possible.

Implementing net zero carbon capital development
Recently the BU estate has undergone significant change with several new buildings coming online. While these buildings perform well, it will be necessary that any further capital develop, such as the planned Arne House, perform even better. Specifically, adopting net zero emissions principles in the design, construction, and operation of any new facilities will support the wider objective.

Objective 6: Adopt and implement the UK Green Building Council Framework Definition for Net Zero Carbon on all major development projects.

Managing climate change risk

Managing risks associated with the crisis involve mitigation (i.e. reducing emissions to avoid the worst potential impact of climate change – covered by Objectives 5 and 6), being resilient to climatic shocks (short term events such as floods) and stresses (longer term issues such as rising temperatures), and quantifying risks such that they can be assessed on the same basis as other corporate risks.

Objective 7a: To implement climate change adaptation measures as indicated in the climate change risk register and favouring nature-based solutions wherever possible.

Objective 7b: To quantify risks according to the Taskforce on Climate Related Financial Disclosures guidance and include on the corporate risk register.

Data management and reporting

One of the challenges associated with tackling the climate and ecological crisis is the ability to be data driven so that actions can be focused and effective. In some areas, such as energy consumption, we have lots of data but, even where we have plenty of data, quality, completeness, and granularity could be better. In some areas the data we have is patchy or unreliable meaning we cannot quantify our impact or make informed decisions.

The focus of this objective therefore is to develop and implement robust data capture, to create better systems of management where data is abundant, and ensure our reporting of data aligns with best practice.

Objective 8: To develop and implement appropriate data capture and reporting to ensure decisions are informed and our reporting aligns with best practice principles.

Each of the above objectives is supported by one or more specific recommendations which are described in detail later in the CECAP.

3. Baseline and reporting

We currently report both annual CMP and sustainability reports (see Appendix 4: Baseline and reporting), but, in the future, we intend to produce an annual CECAP report and a report on the SDGs. In this section we discuss emissions reporting but recognise that reporting in other areas (such as on nature) will also need to be enhanced.

Historically, most organisations with a CMP set a fixed base year in which its carbon emissions were quantified such that an emissions target could be framed as a percentage reduction against that baseline. BU, along with other universities, adopted this approach when establishing the first CMPs around 10 years ago primarily as a response to guidance provided by HEFCE at the time. This led to the 2005/06 academic year being established as the base year for many institutions across England with targets being set for reducing emissions, typically in five-year periods.

With the adoption of a net zero emissions target (see Section 4 for a discussion on the definition of net zero emissions), this original base year becomes less relevant, as targets become somewhat decoupled from the baseline. However; a base year can still be useful in helping to set out a trajectory toward net zero and for understanding progress to date.

3.1 CECAP boundary and baseline

Two important concepts when considering organisational carbon emissions are the boundary condition, (i.e. what operational emissions are to be reported) and the baseline against which progress can be measured. These are discussed below.

3.1.1 Emissions scopes

GHG emissions sources are categorised into three scopes to ensure responsibility for emissions can be accurately allocated and so that emissions are not double counted across organisations. The table below sets out the emissions scopes.

Table 1: Emissions scopes

Scope	Direct/Indirect emissions	Source of emissions
Scope 1	Direct	Emissions associated with sources that are owned or controlled by the reporting organisation. Examples include gas consumption and fleet vehicle fuel use.
Scope 2	Indirect	Emissions from generation of purchased energy (typically electricity)
Scope 3	Indirect	Emissions from activities that occur from sources not owned or controlled by the reporting organisation. These occur in upstream and downstream value chains as follows: Upstream: – Purchased goods and services (Procurement) – Capital goods (New build/refurbishment) – Fuel and energy related activities not included in scopes 1 & 2 (T&D losses) – Upstream transport and distribution (delivery of goods to site) – Waste generated in Operations – Water and waste water – Business travel – Employee commuting – Upstream leased assets Downstream:

		– Downstream transport and distribution – Processing of solid products – Use of sold products – End of life treatment for sold products – Downstream leased assets – Franchises – Investments (can include pensions) Not all of these are relevant to BU and some emissions sources can be more complex to deal with (such as leased assets where allocation to scope depends on lease arrangements and control approach to reporting – see Appendix 4: Baseline and reporting).
Out of Scopes		Alongside the three scopes, some emissions are required to be reported as out of scope. For BU, biomass is relevant here. The carbon dioxide released during combustion is not reported as this was captured during the growth phase of the biomass material, but the other GHGs (e.g. nitrous oxide) should ideally be reported as Out of Scope emissions – see Section 3.4.

3.2 CECAP boundary

The original baseline in 2005/06 and subsequent targets included emissions associated with gas, electricity, and water use, fleet transport, BU buses (on designated routes), and waste sent to landfill. However, this does not represent all emission sources and a more complete list is presented below along with a comment on the maturity of data capture and reliability (see Section 3.5 for a discussion on reporting), and a recommendation regarding whether each should be included in the baseline for this CECAP. Also included are brief notes on specific data issues.

Table 2: Recommendations for inclusion of emission sources in the CECAP

Scope	Emission source	Data capture / reliability	In 2005/06 baseline?	Recommendation / comment
1	**Gas**	High	Yes	Include in baseline Address issues with completeness of data capture.
1	**LPG**	Medium	No	Include in baseline Address issues with accuracy of data.
1	**Biomass (non-CO_2)**	High	No	Include in baseline Address issues with accuracy of reporting by converting heat output to energy input before reporting.
1	**Fleet vehicles**	High	Yes	Include in baseline
1	**Fugitive emissions**	Medium	No	Include in baseline Ensure all F-gas emissions are captured and reported.
2	**Grid electricity**	High	Yes	Include in baseline
3	**BU Bus fleet**	High	Yes	Include in baseline Note requirement to avoid double-counting if commuting emissions are included at a later date.
3	**Hire vehicles**	Medium	No	Include in baseline

3	**Flights**	High	No	Include in baseline
3	**Grey fleet**	Low	No	Exclude from baseline. Data is not sufficiently robust to include – focus on improving data capture for future years
3	**Commuting**	Low	No	Exclude from baseline. Data is not sufficiently robust to include currently. Improve travel survey data capture for future years – note requirement to avoid double counting of BU bus fleet emissions where this is the mode of commuting.
3	**Rail**	Medium	No	Include in baseline Consider measures to improve completeness of data capture
3	**Water**	High	Yes	Include in baseline Address issues of completeness of data capture
3	**Waste water**	Medium	No	Include in baseline
3	**Operational waste**	High	No	Include in baseline
3	**Construction waste**	Medium	No	Include in baseline. On the basis that the University adopts a net zero carbon approach to construction as defined by UKGBC, these emissions should be reported but not included in the annual operational emissions offsetting strategy as they should be dealt with as part of the capital project.
3	**Procurement**	Low	No	Do not include in baseline. Focus on engaging with suppliers with the aim of gathering data on emissions and include in the future
OOS	**Biomass**	High	No	Report as Outside of Scopes emissions in line with best practice principles – see Section 3.4.

As can be seen from the above, and in line with many organisations, we need to do more work to quantify and manage Scope 3 emissions; in particular transport, construction and procurement activities.

As well as emissions sources, the organisational boundary should also be defined in terms of the assets and activities to be included. Effectively, we have to date applied the operational control approach as defined by the HM Government Environmental Reporting Guidelines (which are in turn based on the World Resource Institute Greenhouse Gas Protocol) which is a popular way to define the organisational boundary as it is relatively straight-forward and makes intuitive sense – i.e. if you have operational control of the emissions sources, it is reasonable that you should be responsible for those emissions. We will continue to use this approach as discussed in Appendix 4: Baseline and reporting.

3.3 CECAP baseline

The current baseline year for historic reporting is the 2005/06 academic year. The emissions baseline[15] as recorded with HEFCE is 8,275 tonnes CO_2[16]. Both the previous CMP and our review for the CECAP found some issues with the

[15] Although emissions reporting is often referred to as "carbon dioxide emissions" or simply "carbon emissions", they should more properly be designated Greenhouse Gas (GHG) emissions. This is because there are a range of gases which, when released to atmosphere have a global warming effect on the Earth.

baseline (such as the use of incorrect electrical emissions factors). Given the more complete and robust data now available for more recent years, we have opted to restate the baseline using AY2018/19 data, giving Scope 1 to 3 emissions of 5880tCO_2e – refer to Appendix 4: Baseline and reporting for a full breakdown of the baseline.

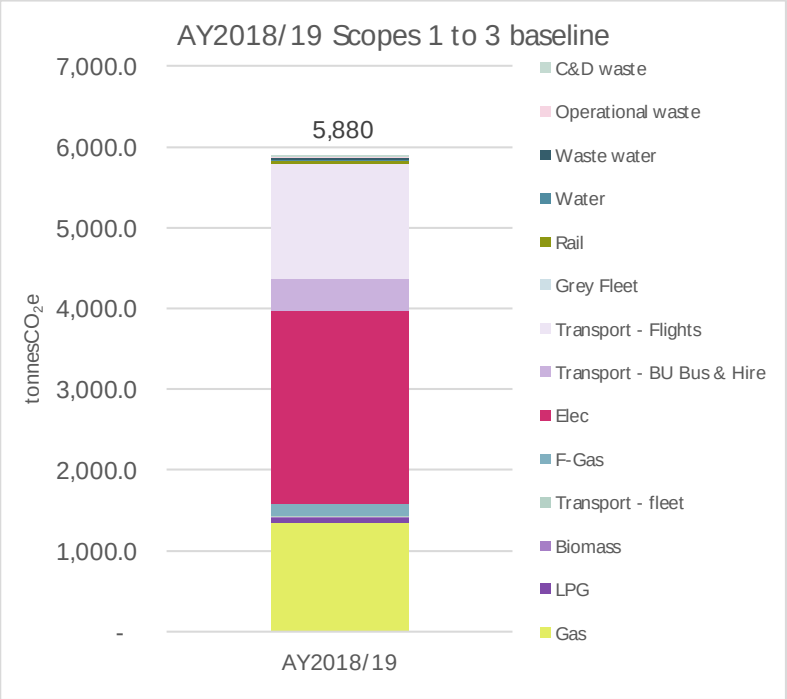

Figure 2: Proposed new baseline year emissions

Under our net zero emissions target, the intention is to take into account all greenhouse gases and to include all emissions sources which we can, with a reasonable degree of accuracy, quantify. Over time, as we gain more and better data, we may include additional emissions sources which could result in an increase in emissions. As part of moving toward best practice reporting principles we will establish a base year recalculation policy which will enable adjustments to the baseline under certain conditions to account for material changes – refer to Appendix 4: Baseline and reporting, for details.

3.4 Outside of scopes emissions

In addition to the three normal emissions scopes included in the emissions baseline, there are some cases where so called "outside of scopes" emissions should be reported separately as tCO_2 (as opposed to tCO_2e), and which contribute to the net emissions total.

In BU's case, this is relevant for the biomass fuels used for the Poole House biomass plant where the carbon portion of the associated GHG emissions should be reported as outside of scope emissions. These emissions do not appear to be included in the current carbon reporting methodology but in the new baseline year established above equate to 189tCO_2; these should continue to be reported in the future.

3.5 Reporting process and data management

However, rather than report each of these emissions separately, it is much more convenient to report a single unit of measure. To this end, GHG emissions are generally reported in units of tonnes of carbon dioxide equivalent (tCO_2e), which takes account of both CO_2 and other GHGs by converting them to the equivalent impact of an amount of CO_2.

[16] When baselines were originally set reporting was in CO_2 rather than CO_{2e}, so does not align with current reporting practice.

Historically, BU has reported emissions performance in two ways: through the annual Estate Management Return to HESA, and independently in the annual CMP Report[17]. The methodology adopted by HESA does not align with best practice and submission of data is now voluntary, and, while our current approach to reporting is generally good there are several enhancements which we can begin to make reporting better aligned with best practice principles[18], which are:

- Relevant
- Quantitative
- Accuracy
- Completeness
- Consistent
- Comparable
- Transparent

We will therefore continue to focus on our own independent reporting and to follow a series of specific recommendations to improve our reporting practice.

Appendix 4: Baseline and reporting discusses a range of topics around our emissions reporting in more detail as well as presenting a high-level review of a number of carbon management software solutions which could be used to help manage the significant amount of data associated with reporting in this area.

[17] https://www.bournemouth.ac.uk/sites/default/files/asset/document/CMP-annual-report-2018-19.pdf

[18] As set out in HM Government Environmental Reporting Guidelines and the GHG Protocol.

4. Net-zero emissions target

ULT (October 2019) and the Board (February 2020) have approved in principle the adoption of a net zero target by 2030/31 covering all three emissions scopes. A 'net zero' target means reducing gross emissions through decarbonisation (e.g. reducing energy consumption or use of renewable energy) and then investing in offsetting of any residual emissions to arrive at a net zero position.

It is important to recognise though that there is a practical (and economic) limit to how close to zero emissions any organisation can come. A question flowing from the understanding that we cannot, based on currently anticipated technology, reasonably expect to get to absolute zero, is how far we should aim to decarbonise before using offsetting.

A robust way to understand what we should aim for is by referring to the various internationally accepted emissions reduction scenarios and setting a science-based target (SBT) aligned to one of them. The Science Based Target initiative (SBTi) set out several potential approaches to setting an SBT and organisations are free to select the most appropriate for them. SBTi also offer a service to 'approve' targets and, although we have not followed the full process for approval, we have utilised the SBTi target setting tool to establish an emissions reduction trajectory, illustrated below.

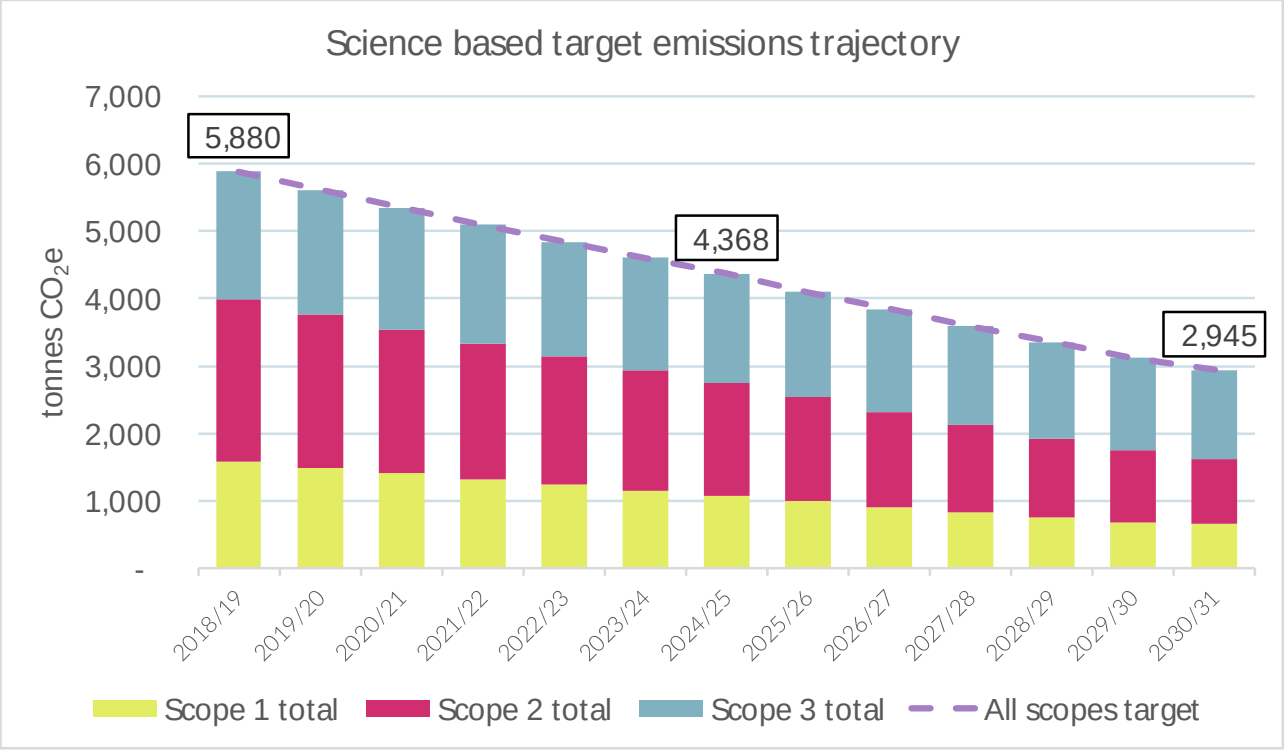

Figure 3: Science based target emissions reduction trajectory to target year

Details of the approach and year on year emissions for each scope are presented in Appendix 5: Emissions reduction targets. Adopting this trajectory provides a means to monitor our decarbonisation progress and hold ourselves to account through public disclosure of emissions, scrutiny through a regular staff and student assembly, and (for relevant areas of the CECAP) ISO14001 external audit. We should note that, depending on the baseline recalculation policy we adopt, we may need to refresh the trajectory periodically as our reporting improves. We may also consider following the full SBTi methodology in the future if the CECAP Group determined that this would be beneficial.

We will aim to achieve net zero emissions through a combination of decarbonisation to follow the trajectory as closely as possible (see Section 5) and offsetting to deal with any remaining emissions (see Section 6).

5. Decarbonisation

In most sectors, the release of GHG emissions into the atmosphere constitutes the main climate impact. Therefore, reducing GHG emissions constitutes the most effective way to reduce that impact.
Our approach, at least in the short term, to the climate crisis therefore primarily focuses on ways in which we can reduce the amount of energy we use to run our buildings and how any energy we must use can be less carbon intense. We also include how BU can continue to deliver world class education and research in ways which create less carbon and how much, and by what means, we travel for work.

5.1 How will we decarbonise?

Having established the levels of reduction required, we have examined ways in which we can reduce emissions across every aspect of BU life and organised a series of recommendations over 13 themes. The headlines are set out below and details of the individual recommendations under each theme can be found in Appendix 6: Recommendations.

Table 3: Decarbonisation themes

Theme	Description
Governance	**This theme recognises that to meaningfully and robustly embed our response to the climate and ecological crisis, our governance structures must support the response across all aspects of BU life.** The chances of successfully responding to the climate and ecological crisis will be immeasurably increased by the engagement and support of all staff across BU. The overall intent of this group of measures therefore is that the crisis and the BU response become directly relevant and tangible to every member of staff. Distinct from the ongoing engagement of staff which appeals to their desire to support action, changes in governance are necessarily more prescriptive and require that processes and procedures take account of the crisis, decisions consider the relative benefits and disbenefits of different choices, and that there is individual accountability for impacts. We should ensure that our strategies and policies explicitly reflect our response to the crisis, that our processes and procedures are structured to support our response and help us hold ourselves to account, and that the way we deliver education and research is aligned with the objectives of the CECAP. We should ensure that individual responsibility for the various aspects of the response are cascaded to all levels across BU and also that the structure of progression and recognition supports, rather than hinders, our response.
Behaviour change	**This theme is focused on mobilising the entire BU community to support our response to the crisis.** The active support of staff and students will greatly increase the chances of successfully responding to the crisis. This theme focuses on a continuation and enhancement of the excellent communication and engagement activity through existing schemes such as Green Impact and Green Rewards, and new activities such as a programme of carbon literacy to engender both awareness and lasting behaviour change. We should identify and leverage all and every opportunity to engage staff and students in supporting the response including increasing carbon literacy and awareness, providing opportunities to reward sustainable behaviours, and an annually refreshed communications plan.

Theme	Description
ESD and research	**This theme is focused on embedding the climate and ecological crisis and broader sustainability into our curricula and research.** Ensuring the next generation of students understand the importance of the crisis and their role and responsibility in helping tackle it. We should seek opportunities to enrich the curriculum and research programmes by building on the existing alignment with SDGs and an understanding of real-world responses through the CECAP.
Adaptation and resilience	**Many of the recommendations which might have been included here have been embedded in other areas, although the issue of staff understanding the need to have their own response to climate and ecological challenges is highlighted by this theme.**
Capital works	**This theme focuses on the impact of major building projects but also considers how other large capital investments can support the climate and ecological crisis response.** We should adopt the UKGBC Net zero framework definition which will focus attention on both embodied and operational emissions and support the net zero emissions target. We should also ensure that nature-based solutions are prioritised over hard-landscaped approaches in all possible cases and that each project contributes to a net gain in biodiversity. The way in which we consider project finances should also be reviewed – ideally this would account for the value, in financial terms, of the eco-system services that nature-based solutions provide.
Existing buildings	**This theme focuses on reducing the amount of energy it takes to run our buildings by improving the efficiency of their systems and making sure we use the buildings as efficiently as possible.** Existing buildings represent the single largest reported emissions source for BU and, while forecasts indicate that their proportion of overall impact may reduce in the future, addressing these emissions will be critical to a meaningful approach to achieving our target. As a priority we should prepare to move away from natural gas a source of heat. The best current alternative is to use electricity and this should be the focus while continuing to monitor technology developments in other areas (such as the use of hydrogen) which may be able to make use of recently replaced boiler plant and associated infrastructure when they reach end of life. We should enhance the efficiency and reduce global warming impact of space cooling across BU by implementing cooling upgrades, identifying opportunities to utilise waste heat from cooling, and ensuring spaces are not over-cooled. We should reduce water consumption through the installation of water saving appliances. We should continue with the various Revolving Green Fund projects already in train and support the identification and implementation of Energy Conservation Measures (ECMs) in future years. We should optimise the performance of all existing buildings, including Poole and Bournemouth Gateway Buildings, through an energy focused review of BMS across all campuses. We should actively seek out opportunities to enhance existing and establish new habitats on our existing campuses for nature, to provide opportunities for the BU community to connect

Theme	Description
	with nature and enhance the resilience of our estate through nature-based solutions.
Renewables	**This theme looks at how we can maximise our generation of renewable energy on-site (especially through the use of photovoltaic panels; PVs) to decarbonise the energy we use and provide resilience in our energy system.**
Transport	**This theme considers a range of ways to reduce the amount of business and commuting travel we do and to reduce the impact of essential travel using lower carbon transport modes and vehicles.** Both the amount we travel and the way we do it play a considerable part in our overall climate and ecological impact. In particular, the amount of flights taken by staff and students, and our fleet vehicles (including BU buses) are key areas where emissions must be reduced. We also need to work on getting a better understanding of the impact of staff and student commuting on our overall emissions. We should move to a low carbon vehicle fleet as soon as possible, including our buses where suitable low carbon alternatives exist. We should consider implementing restrictions on business flights including developing processes requiring specific justification for flights in all cases. We should encourage staff and students to travel less and take advantage of the potential to work remotely through the use of proven technology and when travel is essential to opt for lower impact modes of transport and active travel where possible. We should ensure that our campuses and buildings support low carbon and active travel through the provision of Electric Vehicle (EV) charging and facilities for cyclists and walkers / runners.
Waste	**This theme focuses on both individual actions and supply chain engagement to reduce waste generation and improve recycling rates.** To many people, waste is one of the most readily relatable aspects of climate and ecological impact – we see waste every day and make choices which we can see having an immediate impact; selecting reusable rather than disposable products, choosing products with less packaging, and ensuring waste goes into the correct bin are all things everyone can do. Beyond individual action, engaging with our supply chain to get their support on reducing waste will form an important part of the response in this area. We should continue to monitor waste streams and engage with suppliers in two main areas, setting strict targets on construction waste, including ensuring that the responsibility is not just on the main contractor but the design team focus on designing out waste in the first place. We should also engage with approved suppliers specifically on the issue of packaging. We should engage with the BU community to ensure individuals are supported to produce less waste (by offering better alternatives such as refill points), increase the reuse of furniture and equipment and to maintain and increase the recycling rate across our campuses. We should continue with our zero waste to landfill policy and consider the potential for a net zero emissions approach at the next contract renewal date.
Food	**This theme focuses on how we can reduce our impact through food offerings across BU**. Although we don't currently measure the impact of the food served across BU on the climate and ecological crisis, we know that reducing food waste and the food choices we make can

Theme	Description
	have a significant impact on the crisis. We should consider making vegetarian or vegan catering for all meetings the default position, investigating the potential to remove ruminant meat and other high impact foods from catering outlets (including sourcing locally and seasonally wherever possible), and encouraging staff and students to make lower impact food choices wherever possible.
IT	**This theme focuses on reducing the energy demand of IT equipment and associated infrastructure and encouraging efficient use by looking at the provision of low energy IT equipment and infrastructure and adopting behaviour change techniques to reduce energy demand.** IT equipment is ubiquitous across BU, both in terms of the PCs, laptops, and monitors we use everyday and the centralised servers and communications equipment that support most of our work. We should explore the potential of moving services to the cloud as far as possible, ensuring dedicated IT spaces are operated efficiently, and support the use of efficient IT and associated equipment. We also need to build on the positive aspects of the new ways of working established during the Coronavirus lockdown and use technology to support staff and students working/studying remotely.
Procurement	**This theme recognises the process that we will need to adopt to engage with our supply chain and understand the likely impact of the work they do, or products they supply, for BU.** Procurement is one of the most difficult emissions sources to reliable quantify, yet likely to be one of the most significant when considering all of the energy and resources that go into all of the products and services we purchase. We should review our Sustainable Procurement Policy in line with the general work highlighted elsewhere in the CECAP with a view to specifically referencing the climate and ecological crisis and our response. We should actively engage with our supply chain to gather data on their environmental performance and, where possible, enhance our approach to including such information in decision making. We should also develop guidance for staff across BU involved in procurement activities so that they can make informed choices in their projects. We need to develop and implement a procedure for gathering robust GHG emissions data from our supply chain, based on the GHG Protocol, so we can start reporting our scope 3 procurement emissions.
Reporting	**This theme focuses on taking steps to align our reporting with best practice over time.** Underpinning all of our work responding to the climate and ecological crisis, we need to ensure that the way in which we report our impacts and progress toward reducing them aligns as closely as possible to best practice guidance (as defined by the HM Government Environmental Reporting Guidelines and the GHG Protocol).

For some of these recommendations, it is possible to model the potential emissions reduction that might be achieved as a result of their implementation. Where this has been possible, we have combined individual recommendations to

create scenarios. This gives us an insight into what we might need to do to stay as close as possible to our zero emissions trajectory and minimise cumulative emissions over time. See Section 8 for details.

5.2 Beyond net zero emissions

In working towards decarbonisation, we should recognise that our efforts must not stop after AY2030/31. The SBTi tool creates a trajectory which runs to 2060 and reflects the fact that, in order to meet the established carbon reduction pathways, net negative emissions will be required before 2100. While this need not feature in our current plans, we should be aware of this longer-term issue. The long run SBT trajectory for BU scopes 1 and 2 emissions is shown in Figure 4, below.

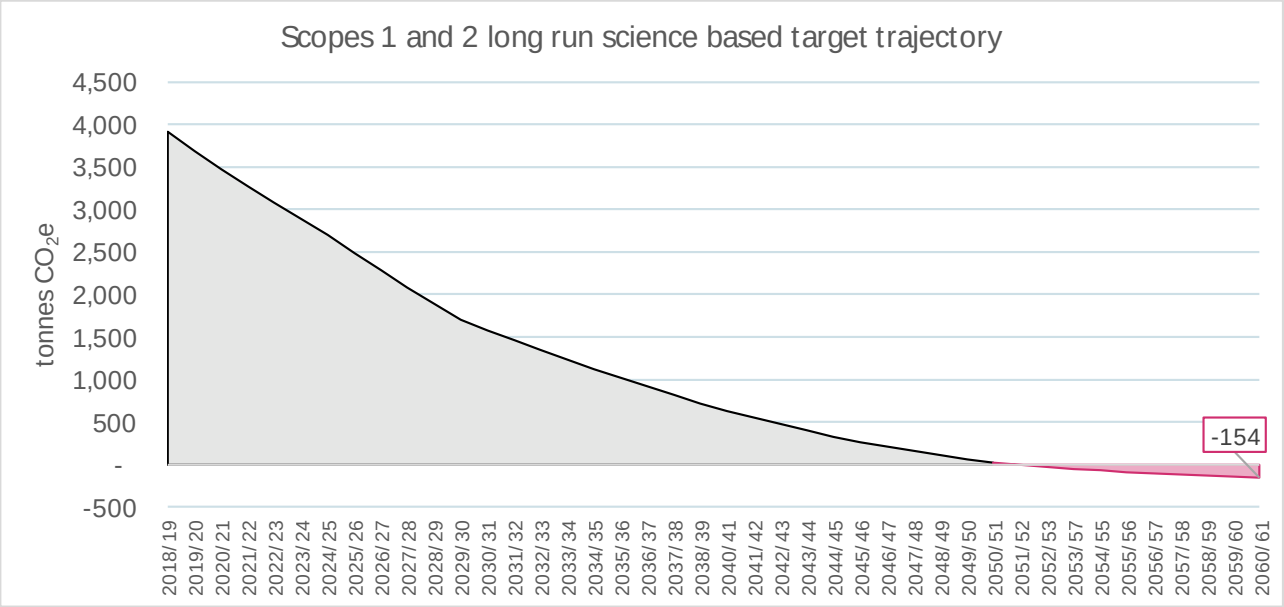

Figure 4: Long run science-based target trajectory through to 2060

6. Offsetting

As discussed above, the second strand to achieving Net Zero Emissions will be to offset any residual CO_2e left after our efforts to decarbonise. This section sets out a summary of considerations and conclusions around offsetting based on the work undertaken during the development of the CECAP. Details of these discussions are provided in Appendix 9: Offsetting.

The work considered the following questions:

- When should we start offsetting?
- Which offsets should we purchase?
- How much might offsetting cost?
- Who should pay?

The conclusions of the deliberation of these questions are given below.

6.1 When should we start offsetting?

We have concluded that we should start offsetting ahead of the net zero target year and as soon as finances allow. This approach has several advantages, including:

- time for us to develop our approach to reporting offsetting activity;
- helping us to become an informed purchaser of offsets ahead of the target year;
- supporting the development of a robust market for good quality offset schemes; and
- ensuring the internal mechanisms, finance, etc. are in place in readiness for the target year, and beyond, when we must offset.

6.2 Which offsets should be purchase?

There is currently no legislation or regulation regarding which types of offset or which specific products must be purchased in order to declare a net zero emissions status. This means that we are currently able to be flexible in our approach to ensure that our investments remove carbon from the atmosphere (in response to the net zero emissions definition) but also to maximise non-carbon benefits as far as possible.

For our position to be robust, we should only purchase good quality offsets. Ideally this means that they should meet the various criteria set out in HMG Environmental Reporting Guidelines and there are several specific schemes that meet the definition of 'good quality' according to the requirements of the PAS2060 standard.

In addition, we also want to consider the potential non-carbon benefits that some offsetting products offer, especially as this will help align our approach with wider UNSDGs.

We concluded that we should aim to procure a mix of different offsetting schemes in each year, particularly in early years while we establish our process and become more familiar with the rapidly developing offsetting market.

6.3 How much might offsetting cost?

How much offsetting might cost is dependent on two factors: the amount of carbon we need to offset, and the cost of offsetting each tonne of CO_2e. We have modelled two scenarios to illustrate potential costs of offsetting: the BAU scenario and the best case emissions reduction scenario (scenario D - see Section 8 for details).

If we consider the SBT decarbonisation trajectory discussed above as the maximum emissions we should emit in any given year in order to fully play our part in sufficiently mitigating the climate and ecological crisis, it is reasonable that we offset any emissions above that trajectory. Comparing the BAU and RE emissions against the SBT trajectory allows an estimate of offsets required in each year. In both cases, we have assumed that 100% of projected emissions in the target year will be offset.

The cost of offsets is generally set in £/tonne CO_2e abated but that cost can vary significantly for different types of project in different locations, even when narrowing the potential investment to only 'good quality' schemes. One of the recommendations of the CECAP is that we should establish an internal price for carbon and our initial suggestion is

that this is set to £19/tonne[19]. This price allows us flexibility in the projects we invest in and allows us to illustrate the potential cost of offsetting. We anticipate that the cost of individual projects will increase over time with global demand.

We have used two different approaches for modelling future offset costs: the first inflates the £19/t by 2.5% each year to 2030/31. The second again starts at £19/t and aligns the 2030/31 price per tonne with indications of potential carbon tax in that year (£78/tCO_2e) as set out in a Committee on Climate Change[20] study, drawing a straight line between the two prices.

The results of these projections are shown below.

Table 4: Illustrative annual and cumulative offsetting costs for BAU and emissions reduction scenario D

	Internal carbon price	Cumulative cost	Carbon tax aligned	Cumulative cost	Internal carbon price	Cumulative cost	Carbon tax aligned	Cumulative cost
2019/20	£9,883	£9,883	£9,883	£9,883	£9,883	£9,883	£9,883	£9,883
2020/21	£9,579	£19,461	£11,763	£21,646	£9,250	£19,133	£11,360	£21,243
2021/22	£12,418	£31,879	£17,937	£39,583	£8,931	£28,064	£12,900	£34,142
2022/23	£11,316	£43,195	£18,665	£58,248	£6,214	£34,277	£10,249	£44,392
2023/24	£12,452	£55,647	£22,957	£81,204	£5,240	£39,517	£9,661	£54,052
2024/25	£12,340	£67,986	£25,018	£106,223	£0	£39,517	£0	£54,052
2025/26	£15,580	£83,567	£34,294	£140,517	£0	£39,517	£0	£54,052
2026/27	£22,045	£105,611	£52,139	£192,656	£5,410	£44,927	£12,796	£66,848
2027/28	£26,636	£132,247	£67,117	£259,773	£929	£45,856	£2,341	£69,189
2028/29	£29,594	£161,841	£78,885	£338,657	£2,755	£48,611	£7,344	£76,533
2029/30	£32,269	£194,110	£90,441	£429,098	£0	£48,611	£0	£76,533
2030/31	£107,067	£301,177	£334,992	£764,090	£67,317	£115,929	£210,622	£287,155
	£301,177		**£764,090**		**£115,929**		**£287,155**	

The above illustrates the significant savings in offsetting costs represented by the reduced emissions scenarios although it is worth noting that implementation of the measures to achieve this level of reduction will be considerable. The Scenario D forecast suggests that emissions may be slightly lower than the SBT trajectory in some years so there is no offsetting cost – this is dependent on final feasibility of the measures and the rate of their implementation.

It should also be noted that there is significant uncertainty regarding the future price of offsets and it maybe that the modelled internal price does not keep pace with the market.

[19] Based on the closing price of the mandatory Carbon Reduction Commitment Energy Efficiency (CRCEE) scheme

[20] https://www.theccc.org.uk/wp-content/uploads/2019/08/Vivid-Economics-The-Future-of-Carbon-Pricing-in-the-UK.pdf

6.4 Who should pay?

While the majority of offsets should be paid from central funds, we are recommending the adoption of a polluter pays principle which allows the collection of an amount of funding from departments. The cost would be based on the internal carbon price discussed above and applied to departmental activity that is readily quantifiable and attributable to the department, such as flights. Over time, the principle may be extended to include other activities.

We also recommend extending this principle to other areas such as capital projects through increased budgets (or at least budgets that include for this cost) and, potentially, staff and students through parking charges. This means that our offsetting should be funded from a range of sources and not all centrally funded.

Finally, all of the above represent a new area of governance for BU and, as such, optimising our approach will take some time. Initially, it is recommended that the existing Carbon Management Plan group, supplemented by representatives from the Finance and Legal teams, and the student body, should develop and implement an offsetting strategy and determine whether a separate body should oversee this activity in the future.

7. Business as usual

Having established a target trajectory, it is useful to understand what a Business As Usual (BAU) forecast of future emissions might look like by comparison, taking into account anticipated changes within BU (such as planned capital works) and relevant external factors (such as the continued decarbonisation of the national electricity grid). As with any forecast, there is inherent uncertainty as assumptions may not be accurate, plans change, and so on. To account for this the future BAU forecast is presented here as a range. Of particular note at the time of writing is the certain impact of Coronavirus on BU emissions in AY2019/20 (for which data is not yet available) and the very uncertain ongoing impact in future years. Therefore, the BAU is based on known data up to AY2018/19 but, as recommended later in the plan, forecasts should be updated each year as we get a better understanding of the impact of lockdown and changes in future working practices.

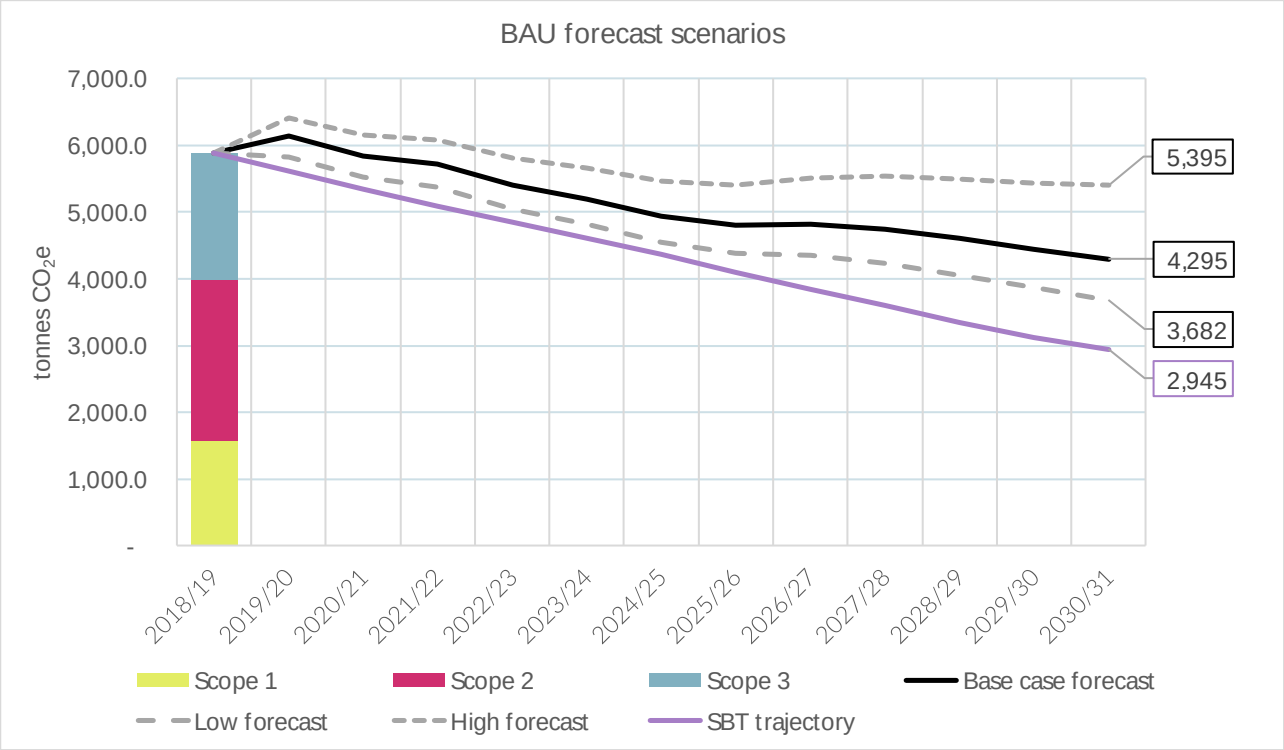

Figure 5: Business As Usual emissions scenarios between 2018/19 and 2030/31

Notes to chart

Base case forecast	This forecast presents the current best-estimate projection of emissions based on historic data.
High-range forecast	The high-range forecast includes a +10% uncertainty over the base case with an annual increase in uncertainty of 15% (i.e. year 1 = 10%, year 2 = 11.5%, etc). This case is modelled to account for potential issues including slower than anticipated grid decarbonisation and increases in energy demand from the estate particularly associated with new development.
Low-range forecast	A key driver for the anticipated reduction over time is continued decarbonisation of the grid. While emissions factors in the BEIS time series adopted (see below) are significantly higher than some of the projections published by the National Grid, they are not seen as pessimistic, and therefore the uncertainty has been set lower than in the high-range forecast. The low-range forecast includes a -5% uncertainty over the base case with an annual

	increase in uncertainty of 10% (i.e. year 1 = -5%, year 2 = -5.5%, etc). This case considers the impact of more significant decarbonisation of the grid and greater efficiencies being found in the estate, including from new development.
Increases in BAU	Increases in the BAU in early years are driven primarily by major capital projects becoming operational as part of the current Estates Development Framework. We understand that the next major capital project, Arne House, is likely to be delayed but is currently included as coming online in 2024/25. Estate development beyond this is not currently included.
Basis for emissions	A key variable is the rate at which the UK electricity grid decarbonises. The BEIS projections for generation-based grid emissions have been used adjusted to smooth the reduction rate over time.

Future changes modelled in the BAU are set out in Appendix 7: Modelling assumptions.

It can be seen from the BAU modelling that even in the optimistic case emissions in the target year are significantly above the required SBT trajectory, confirming that we cannot rely on externalities, such as ongoing grid decarbonisation to achieve sufficient reductions and we must act to keep emissions as close as possible to the required trajectory.

8. Emissions reductions scenarios

To illustrate the impact of those recommendations that can be reasonably quantified, we have modelled several scenarios which combine various recommendations. As modelling of the future will always include significant uncertainty, the scenarios should be seen as indicative of potential outcomes rather than absolute indicators of future emissions.

8.1 Measures

The following measures have been included as part of the scenario modelling.

Table 5: Modelled emissions reduction measures

Measure	Title	Description
1	**ECMs**	This measure focuses on the identified ECMs in the Revolving Green Fund works programmed for the next three years. As projects in this list reduce electricity consumption, the carbon benefit in future years reduces as the emissions intensity of the grid continues to decline. It may be possible to balance this with identification of additional projects over time, but it should be noted that as more and more of the available projects are completed savings from ECMs are likely to reduce.
2	**Heat switch**	This measure examines the potential impact of moving away from natural gas fired heat provision. Currently the model assumes the use of heat pumps but the key principle is not to use natural gas rather than a particular alternative technology. Measure 2A considers a switch away from gas on Talbot Campus only, Measure 2B examines a more ambitious switch across the whole BU estate.
3	**Cloud data centre**	This measure quantifies the potential benefit of the relocation of the Studland House data centre to the cloud; a project already being explored by the IT team. Measure 3A models the impact of early closure of the data centre, while Measure 3B looks at closure later in the period but still prior to the target year.
4	**PV installation**	The installations programmed for Jurassic House and Poole House are already included in the Business as Usual model so this measure focuses on other potential locations for installations of PV, both building mounted and on canopies of appropriate car parking areas. Measure 4a assumes installation of PVs on canopies over the Chapel Gate car park and Car Park B on Talbot Campus. Measure 4b assumes installations on several buildings in addition to the above.
5	**Flights**	Flights already represent a significant proportion of our emissions and, with the continuing decarbonisation of electricity, they are anticipated to become a larger proportion if not addressed. This measure models a simple percentage reduction in each type of flight to illustrate the impact on future emissions with some domestic flights being replaced with rail travel.
6	**EV fleet**	This measure quantifies the benefit of the current intended initiative of moving the BU vehicle fleet to all-electric vehicles.
7	**LEV / ULEV buses**	This measure examines the impact of moving to either a hybrid (Low Emission Vehicle, LEV, measure 7a) or all-electric (Ultra-Low Emission Vehicle, ULEV, measure 7b) bus fleet at the next contract renewal point in 2026 based on BU research into likely emission reductions in each case.

Emissions savings have been estimated for all measures and, where possible, we have also modelled capital cost and cost savings although this has only been possible for a small number of measures. Tables showing the output of the modelling are included in Appendix 8: Emissions reductions scenarios.

8.2 Scenarios

Four scenarios have been modelled, each of which represents a different combination of the above measures. The scenarios serve to illustrate the potential of the measures, in combination, to reach both the SBT target year emissions and the appropriate level of decarbonisation, and to achieve the SBT trajectory to limit cumulative emissions.

Table 6: Emissions reductions scenarios measure combinations

	Measures										
Scenario	1	2A	2B	3A	3B	4A	4B	5	6	7A	7B
	ECMs	Heat switch		Data centre		PVs		Flights	EV Fleet	Buses	
		TC Only	All sites	Early	Late	Low	High			Hybrid	EV
A	Y	N	N	N	N	Y	N	N	N	Y	N
B	Y	N	N	N	N	N	Y	Y	Y	Y	N
C	Y	Y	N	N	Y	N	Y	N	Y	N	Y
D	Y	N	Y	Y	N	N	Y	Y	Y	N	Y
	Y: Included in scenario N: Not included in scenario										

The charts below illustrate the performance of the various scenarios. It can be seen that only Scenario D achieves the required emissions in the target year and approximates the SBT trajectory reducing cumulative emissions between now AY2030/31.

Table 7: SBT and emissions reductions scenarios target year emissions and cumulative savings

Scenario	Estimated emissions in target year (AY2030/31) tonnes CO_2e	Estimated cumulative emissions below BAU in target year tonnes CO_2e
SBT	2,945	9,595
A	4,256	529
B	3,867	3,592
C	3,138	4,715
D	2,700	8,252

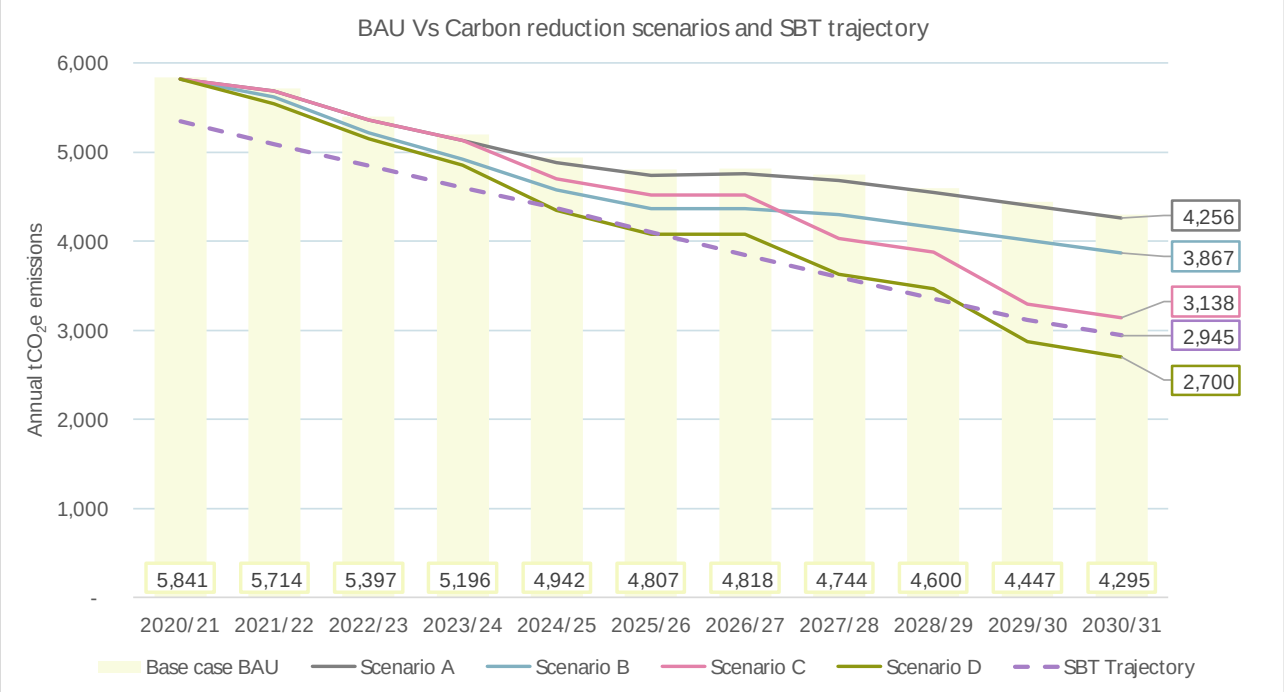

Figure 6: BAU annual emissions Vs carbon reduction scenarios and SBT trajectory

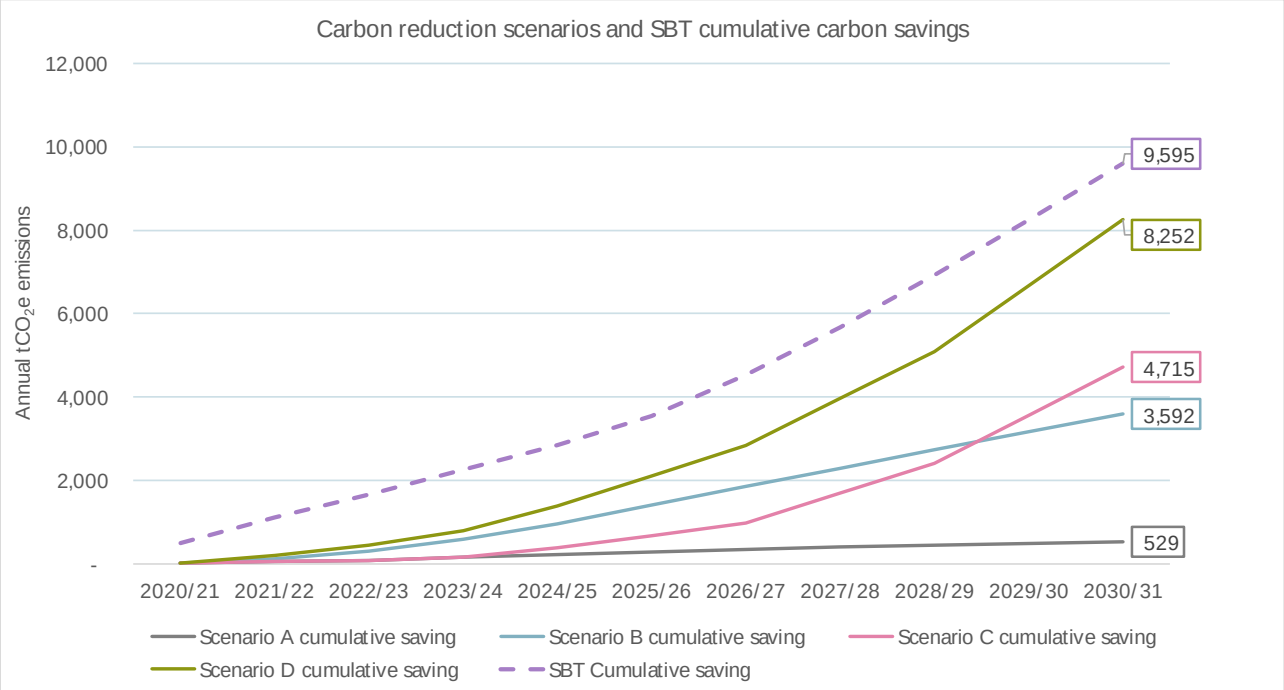

Figure 7: Carbon reduction scenarios and SBT cumulative carbon savings

9. Implementing the CECAP

The objectives of the CECAP will be achieved by implementing the various recommendations shown in Appendix 6: Recommendations. The timeline for implementation is set out in an action plan over the next six years[21] – refer to Appendix 10: Action Plan for details.

This section sets out the intended approach for short term priorities and discusses longer term activity to be kept under review.

9.1 Laying the groundwork

The CECAP attempts to reach much deeper into BUs organisation and much more broadly across our activities than previous carbon management plans. In recognition of this, we have included a range of recommendations focused on governance, behaviour change, and aligning education and research with our response and wider SDG objectives as well as reviewing all relevant BU policies to ensure they support the crisis response – refer to Appendix 11: Policy review for details. As these underpin all the CECAP objectives they should be implemented as a priority.

They also have the advantage that the vast majority will require resource input (i.e. time) rather than requiring capital investment and thus represent good value as part of laying the groundwork for the successful implementation of this first CECAP and future iterations. That said, a number of the recommendations presented will require capital investment, changes to the way existing funding is allocated and spent, new systems to be put in place, or a combination of all of the above. For this reason, engaging with the Finance Department will be an essential part of implementing the CECAP.

The work of the recently established Transformation Team is likely to be influential and should be capitalised on where appropriate to support the various recommendations set out in the CECAP.

9.2 Short term focus for decarbonisation

Two key factors influence the focus for decarbonisation over the short term (i.e. the next few years): the opportunity to capitalise on learning from the impact of the Covid-19 lockdown, and the financial constraints we currently face.

Considering these two issues, the following priorities emerge as they are either relatively low cost, positively build on our lockdown experience, or both:

- Maximise the opportunity to reduce business travel, particularly by air
- Work with IT to build on their excellent work supporting remote working during the lockdown
- Continue to implement energy conservation measures funded by the Revolving Green Fund (RGF)
- Continue to encourage staff and students to connect with nature for their health and wellbeing and demonstrate their appreciation of these ecosystem services by adopting pro environmental behaviours

9.2.1 Business travel

With huge numbers of people in the UK and overseas working remotely from their normal place of work during the lockdown, everyone has learnt a lot – IT teams have understood the limitations of systems to securely and reliably allow people remote access to networks, organisations have recognised how to operate with teams disparately located, and many individuals have rethought the ways in which they work often realising that they don't need to be at their desk every day. All of this represents a very significant opportunity to:

- Reduce the amount of business travel through the promotion of alternative modes of working;
- Reduce the amount of staff and students commuting to our campuses every day thus improving local congestion issues and air quality;
- Reduce pressure on our car parking and improve conditions on campus; and
- Increase the proportion of people opting for more sustainable modes of transport when they do travel, including active modes.

[21] We have selected six years as the action plan period as 2025/26 is the latest year for a recommendation with a specific implementation date.

Over the next three years, we should focus on maximising the opportunity to capture the positive changes to working practices for the benefit of the climate, nature, and individuals.

9.2.2 IT

As noted earlier in the report and above, IT is both ubiquitous in our work and underpins our ability to successfully transition to a new normal way of working. A focus for the first few years of CECAP is to support IT to deliver services to users in the most carbon efficient way possible, including:

- Encouraging and supporting individuals to work remotely through provision of seamless IT services
- Improving the efficiency of the Jurassic House data centre
- Improving the efficiency of distributed server and comms rooms
- Supporting a move to relocate services to the cloud where possible, including the potential to relocate the Studland House data centre if possible

The CECAP should both support these objectives at an organisational level (by working to create the right environment for people to work remotely for instance) and to directly support initiatives through funding.

9.2.3 Energy conservation measures (ECMs)

The energy team have already identified a range of ECMs with the intention of funding them through the RGF. These should be prioritised as measures which directly reduce energy consumption in buildings tackle the most significant proportion of our emissions - especially for electricity-based systems. The current plans focus on the following types of intervention:

- Continuing the roll-out of replacing existing lighting with LEDs;
- Water heater upgrades;
- Building services insulation; and
- IT Communications Room UPS upgrades

These measures should be implemented as soon as possible to capture and secure savings.

9.2.4 Other decarbonisation priorities

One of the intentions in developing the CECAP was to survey some of our buildings to identify additional projects that could be considered for the short term, however, the C19 lockdown has, so far, prevented us from doing this. Nonetheless, a small number of potential projects have been identified, including an estate-wide BMS optimisation programme and replacement of Poole House smoke vent compressed air system.

A further, and critical, short-term priority is to actively develop a strategy for moving away from the use of natural gas for providing space heating and domestic hot water. The cumulative emission impact of delaying a move away from gas is likely to risk not achieving the SBT carbon reduction trajectory and will significantly increase offsetting costs. Alternatives to natural gas could, theoretically, be achieved in various ways such as moving to a gas / hydrogen blended fuel or electrically derived heat. While a significant proportion of existing boiler plant can cope with an injection of around 30% hydrogen to the gaseous fuel mix, its availability is unknown and plans for hydrogen injection are only just emerging. Add to this the fact that hydrogen production is not currently derived in a low carbon way and it makes a poor choice at this time, particularly considering the urgency of action.

This initial period should be used to examine the key challenges associated with moving away from natural gas and developing a strategy to deal with them. However, we have invested in a boiler upgrade programme in recent years and these will be in use for at least the next 15 so we should avoid a continuation of this programme if possible as this would result in locking in emissions beyond the target year.

Finally, as far as finances allow, we must continue to invest in the installation of renewable technologies to maximise independence from the grid and take advantage of zero emission electricity. There are opportunities still to be explored on Talbot and Lansdowne campuses, and the potential for the Chapel Gate site is high.

9.3 Short term focus for offsetting

As the second strand in our approach to climate change mitigation, the focus for offsetting in the short term should be to establish a group to oversee all aspects of BU offsetting, including:

- Creating the necessary internal mechanisms for offset payment
- Confirming the sources of funding for offsets
- Working with Legal to review potential offset projects
- Creating a mechanism for recording and reporting offsetting activity
- Beginning to invest in offsets
- Developing an offset strategy as a live and evolving document based on learning from the above activities

9.4 Short term funding

Pressure on finances has been exacerbated by the uncertainty around enrolment numbers in the next year (or more) as a result of Covid-19 meaning that funding the CECAP in the short-term is likely to be challenging as the £6.8m investment identified for carbon reduction projects to 2025 (as part of EDF 1 & 2) is no longer available. As discussed earlier, over the next ten years, playing our full part in responding positively to the climate and ecological crisis will undoubtedly require difficult decisions to be made but transitioning to a net zero emissions future is essential if we are to indeed play our full part and to mitigate financial risks associated with high levels of emissions (see Section 2.4 for a discussion of risk).

There are however some sources of funding which already exist, or which could be developed to support implementation of the plan, these are discussed below.

Table 8: Identified funding sources for decarbonisation and offsetting

Funding	Source	Potential value	Notes
Currently budgeted	EDF	£100,000 for AY2020/21	Nothing in the capital plan for the next two years of the capital funding period, however there will be the possibility to bid for funds from the minor works budget.
Revolving Green Fund	Salix	£70,000	This funding is already allocated and should continue to be available as long as projects meeting the Salix criteria can be identified.
Parking permit revenue	Staff and students	£65,000 to £250,000 per year[1]	There is a wide variation in the potential funding from this source but it has the potential to significantly enhance the scope of decarbonisation activity.
Polluter pays principle	Departments	£28,000 per year[2]	This figure is based on easily quantified transport emissions but does not take account of the potential reduction in these emissions as a result of a post-C19 working environment

Notes
1 – These figures are the additional parking revenue that would be generated for Options A & B of the Staff parking permit price increase options paper to the Travel Plan Group in June 2020
2 – Based on 2018/19 flights, rail, and fleet vehicles

The above represent a considerable opportunity to generate funds to support the transition to net zero emissions.

9.5 Resources

Clearly, implementing the various recommendations set out in the CECAP cannot be done without a significant amount of effort. The Sustainability Team has been bolstered by an additional post (Sustainability and Energy Analyst) and there should be sufficient resources to co-ordinate and deliver the CECAP in the short term although there is likely

to be a need to increase engagement to fully embed the objectives and recommendations of the CECAP so this should be kept under review.

In the medium to long term, more resource may be necessary depending on the development and implementation of Scope 3 emissions reporting and any move to tackle emissions in this very broad area of impact. In particular, the Procurement team may require an additional post to increase engagement with suppliers and to work with them to drive down emissions in this area.

9.6 Communications

We have already discussed the importance of mobilising the entire staff and student body to support our response to the climate and ecological crisis – a key part of that will be how we communicate the plan, both initially and over the years to come. There is, therefore, a clear need for an ongoing communications plan to ensure that the CECAP remains visible and relevant to the entire BU community.

9.6.1 A voice shaped by listening

Our approach to communication critically includes a significant focus on listening to the views of the BU community to ensure that we aren't simply echoing the voice of those who are already committed to responding positively to the crisis – our success rests on mass mobilisation.

To help shape our approach to communications, we carried out a survey of staff and students to get an initial understanding of their attitudes to the crisis and their appetite for supporting our response.

Key findings from the survey indicate that the majority of respondents (~95%) are concerned about the climate and ecological crisis but that significantly less (~67%) are confident that the actions they take will make a difference, emphasising the importance of supporting individuals by educating around the actions they can take and how they will contribute to the response. Although those completing the survey were self-selecting and therefore likely to already have an interest in this agenda, over 88% of respondents said that they would be willing to change their personal actions to address the crisis – capitalising on this motivation will be a key strand of the approach to mobilising the BU community.

In forming our communications plan, which we will update annually in response to the changing landscape of the crisis, we will use the four touchstones of knowledge, skills, behaviour and values to direct efforts to be sure that people understand what the challenge is, what they can do, how they should do it and, perhaps most importantly, why. We will also call on those who are recognised as leaders across our community such that the messages we are communicating are based on listening and articulated with voices that we can all respond to.

Collaboration

We will continue to collaborate with both internal and external stakeholders, in particular with BCP and Dorset Councils who have declared Climate Emergencies. We will also seek opportunities to work in partnership with other groups, such as the EAUC, AUDE, Dorset LEP, Aldersgate Group and COP26 Universities group.

Governance

The current governance structure for managing the delivery of the CECAP is fit for purpose, with one proposed additional group to hold BU to account. The Sustainability Team will co-ordinate delivery of the CECAP and report through the CECAP group (whose remit will be revised to include offsetting), Estates Development and Sustainability Committees to ULT and the Board.

It is proposed to set up a student and staff assembly which would meet at least twice a year to hear an account of progress with the CECAP and have the opportunity to discuss aspects of the Plan and make recommendations for its enhancement. This model is based on the approach taken by the UK government in setting up the Climate assembly UK (www.climateassembly.uk/).

9.7 Continual improvement & review

The CECAP is based on the Plan – Do – Check – Act continual improvement model (as per ISO standards). We recognise that internal and external factors will continue to shape our response to the climate and ecological crisis

and so we will need to keep the CECAP under review and update as necessary. We will report on progress in a variety of ways, including:

- Annual CECAP report
- Reports to the CMP group and Estates Development and Sustainability Committees
- Reports for internal and external ISO14001 and ISO50001 audits
- Report to the student and staff assembly

We will also complete a full review as part of the BU2025 review in 2024/25 and so be able to input into the next BU strategy.

Appendix 1: United Nations Sustainable Development Goals (SDGs)

Refer to separate CECAP Appendices document.

Appendix 2: PESTLE analysis

Refer to separate CECAP Appendices document.

Appendix 3: Ecosystem services

Refer to separate CECAP Appendices document.

Appendix 4: Baseline and reporting

Refer to separate CECAP Appendices document.

Appendix 5: Emissions reduction targets

Refer to separate CECAP Appendices document.

Appendix 6: Recommendations

Refer to separate CECAP Appendices document.

Appendix 7: Modelling assumptions

Refer to separate CECAP Appendices document.

Appendix 8: Emissions reductions scenarios

Refer to separate CECAP Appendices document.

Appendix 9: Offsetting

Refer to separate CECAP Appendices document.

Appendix 10: Action Plan

Refer to separate CECAP Appendices document.

Appendix 11: Policy review

Refer to separate CECAP Appendices document.

Appendix 12: Historic performance metrics

Refer to separate CECAP Appendices document.

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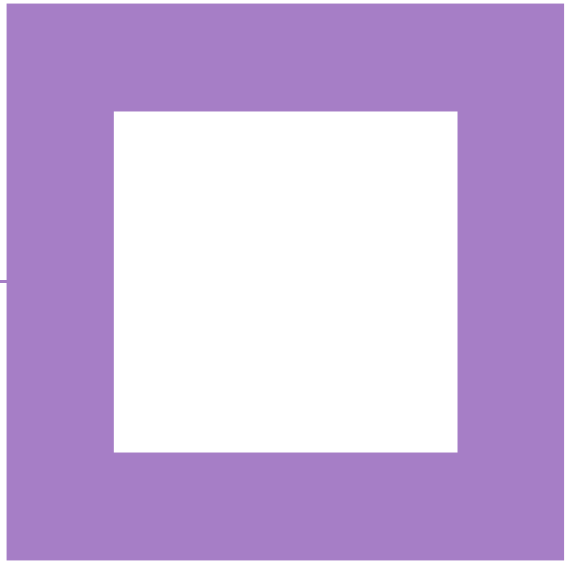
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