Carbon and Energy Management Plan 2020-2030

October 2020

UWE Bristol | University of the West of England

Contents

1. Introduction

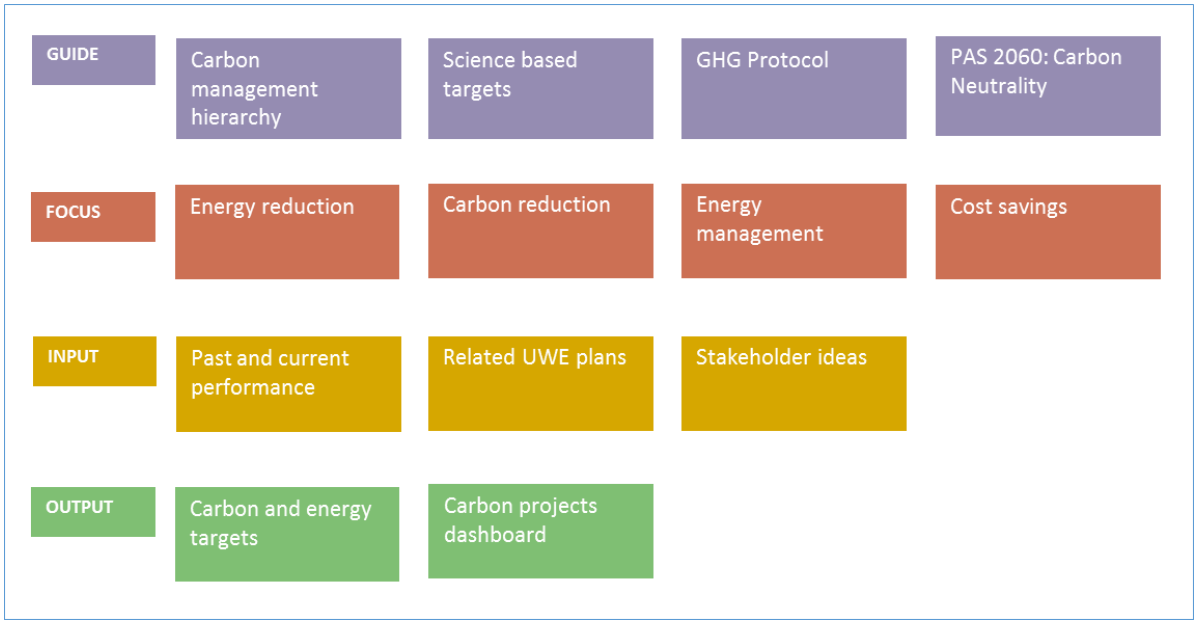
Contributing to other ambitions

The Climate Change Act 2008 committed the UK to an 80% reduction in carbon emissions relative to the levels in 1990, to be achieved by 2050. In June 2019, secondary legislation was passed that extended that target to reduce the UK's net emissions of greenhouse gases by 100% relative to 1990 levels by 2050[1].

Both Bristol City and South Gloucestershire Councils have goals to achieve a carbon neutral city / district by 2030. The West of England Combined Authority has also set a 2030 net zero goal.

Association of Colleges, EAUC, GuildHE and Universities UK have partnered to establish a Climate Commission for UK Higher and Further Education Students and Leaders to catalyse action to create real impact and drive change within the sector, contributing to the UK response to climate change. UWE contribute significantly to this Committee, and welcome the recommendations of the Committee, which influence our own work in this field .

UWE have made a commitment to be carbon neutral by 2030. This *Carbon and Energy Management Plan 2020-2030* outlines the key approaches and actions to achieve this target.



[1] http://www.legislation.gov.uk/uksi/2019/1056/contents/made

2. Transforming Futures Strategy 2030

Transforming Futures Strategy 2030 sets out our focus for the next 10 years. It will evolve and develop as we continually review our own performance and adapt to a rapidly changing environment.

The Strategy has strong commitments to sustainability and carbon emissions reductions, outlined in seven commitments:

"Through our 2030 Strategy we will work to address the urgency of the climate and ecological emergency and strive to fulfil our role in the achievement of the United Nations' Sustainable Development Goals."

Be carbon neutral as an organisation, with net-zero emissions of greenhouse gases by 2030.

Work with our students to explicitly address climate change and environmental challenges through our teaching, learning and curriculum.

Work through the ISO 14001 standard to set clear targets and plans to reduce water and energy use, cut waste generation including food waste, and support biodiversity.

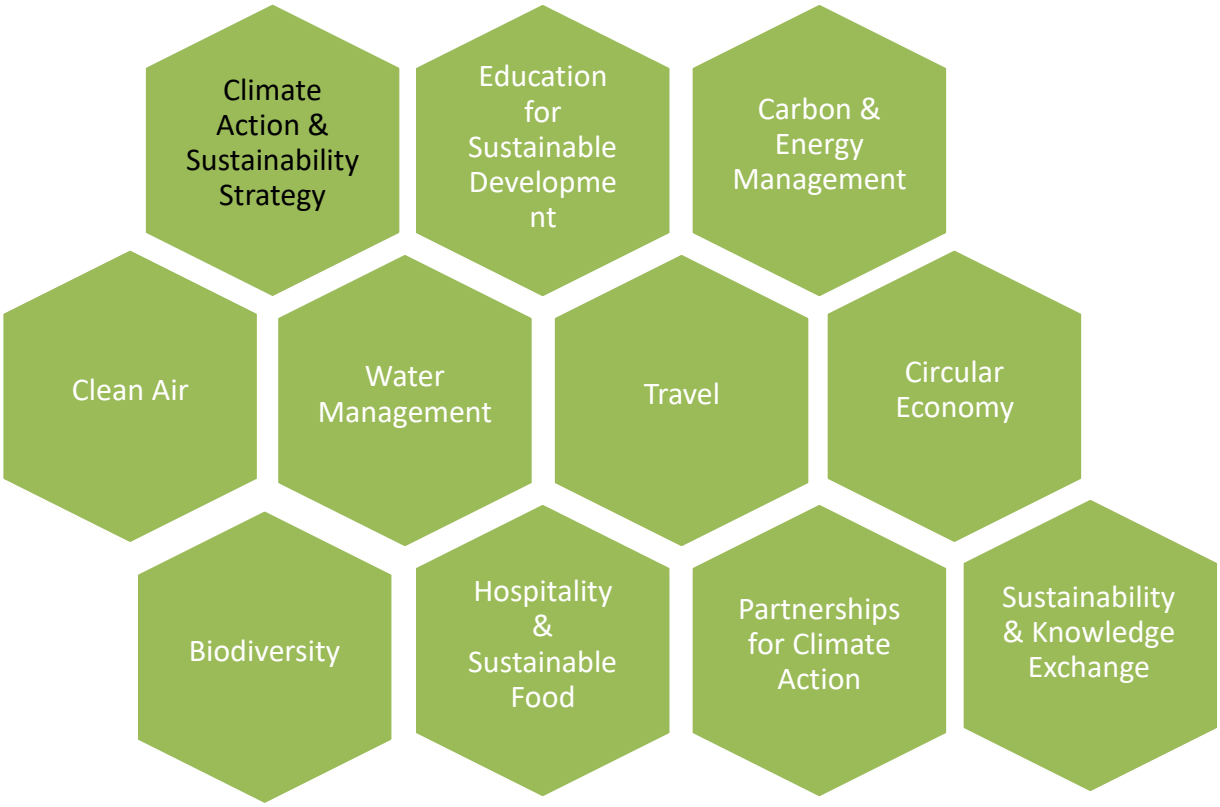
Establish all our campuses as clean air and smoke-free zone.

As signatories to the UK Plastics Pact, eliminate all but essential single-use plastic and meet the 2025 targets for recycling and reuse.

Invest in and secure year-on-year improvement in travel sustainability for staff, students and visitors.

Support research that addresses issues relating to climate change, environmental challenges and biodiversity.

The Strategy is implemented through a series of sub-strategies and plans.
The Carbon and Energy Management Plan is one of a series of ten Plans that set out how the Transforming Futures Climate Action and Sustainability Strategy will be delivered.



In January 2020 UWE Board of Governors publicly declared a Climate and Ecological Emergency, resolving to redouble our efforts to address the urgency of the mitigation and adaptation measures required.

Headline target

The Carbon and Energy Management Plan focuses on the headline target:

> "To be carbon neutral as an organisation, with net-zero emissions of greenhouse gases by 2030"

UWE are taking responsibility for all carbon emissions as a result of the university operation - from direct and indirect emissions. In Greenhouse Gas Protocol terms, this is Scopes 1, 2 and 3.

Roles and responsibilities

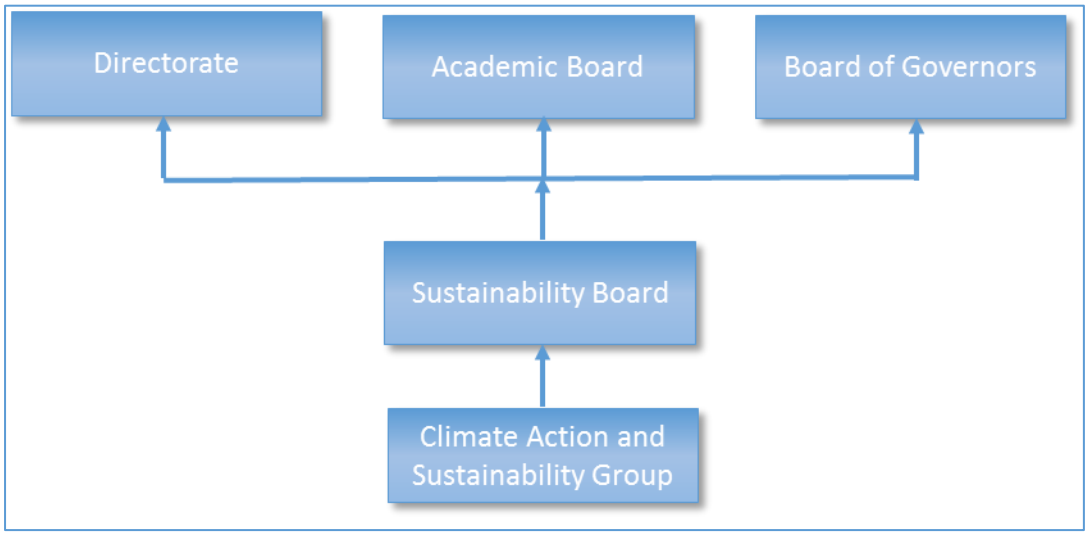
Achievement of the target will involve the whole university, and will include bringing employees, students and suppliers on board.

The Carbon and Energy Plan is overseen by the Energy Manager, with particular focus on the overall carbon accounting methodology and processes. Scope 1 and 2 are the operational and reporting responsibility of the Energy Team. Scope 3 input is the reporting

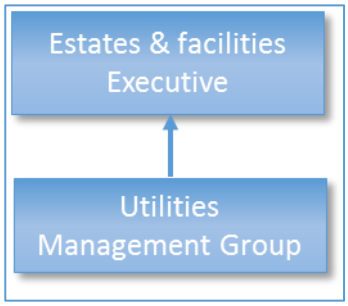
responsibility of the Sustainability Team, with responsibility for operational elements dispersed across the university and monitored through the certified ISO 14001 Environmental Management System.

Governance

Progress and issues are reported to the Climate Action and Sustainability Group (CAS), which can then be escalated through the Sustainability Board to the Directorate, Board of Governors or Academic Board.



The Utilities Management Group review utility procurement strategies; monitor the delivery and performance of energy projects; receive update reports on the progress towards carbon management plan targets; highlight legislative changes; and highlight risks where major capital projects may not deliver on sustainability targets. This reports to the Estates and Facilities Executive.



Campus 2030 shall monitor progress on the carbon target, with particular attention to the impact of new builds, refurbishment projects, building purchases and disposed estate on the carbon trajectory.

A Governance review with the aim to achieve a simpler and clearer means of reporting on progress, risks and opportunities will be completed within the first year of the Plan.

Reporting cycle

Report on delivery of plan to Utilities Management Group quarterly and progress on KPIs to Climate Action & Sustainability Group and the Sustainability Board, also quarterly. In the Spring of each year the projects for the following year are proposed to the Utilities Management Group, with budgets being sought from the budget planning round. Progress on the headline carbon reduction target will be reported to the Directorate using the key performance indicator of *kg CO_2e per capita (FTE staff and students) per year.*

Monitoring progress

Reporting on KPIs will be facilitated by the Energy Team, working closely with the Sustainability Team, recognising the time lag of data from end of year. Other Sustainability Action Plans incorporate targets that relate to carbon emission reduction. These are outlined in Appendix 3. Improved means of reporting data with real time is included in the Action Plan below. This will include reporting on Scope 1, 2 and 3.

Engagement

Students and staff contributions and engagement to the UWE carbon management plan are welcome, and achieved though the following mechanisms:

- Student and staff representatives on the Sustainability Board;
- Ongoing invitiation to the SU Green Team to work with sustainability staff (for example, on various Working Groups; events and communications activities; teaching and learning; and ad hoc events);
- Ad hoc events at key points of development of carbon reduction plans;
- An open invitation of involvement on the "get involved" section of the UWE website.

Review point

This plan will be subject to a mid-point review in 2025.

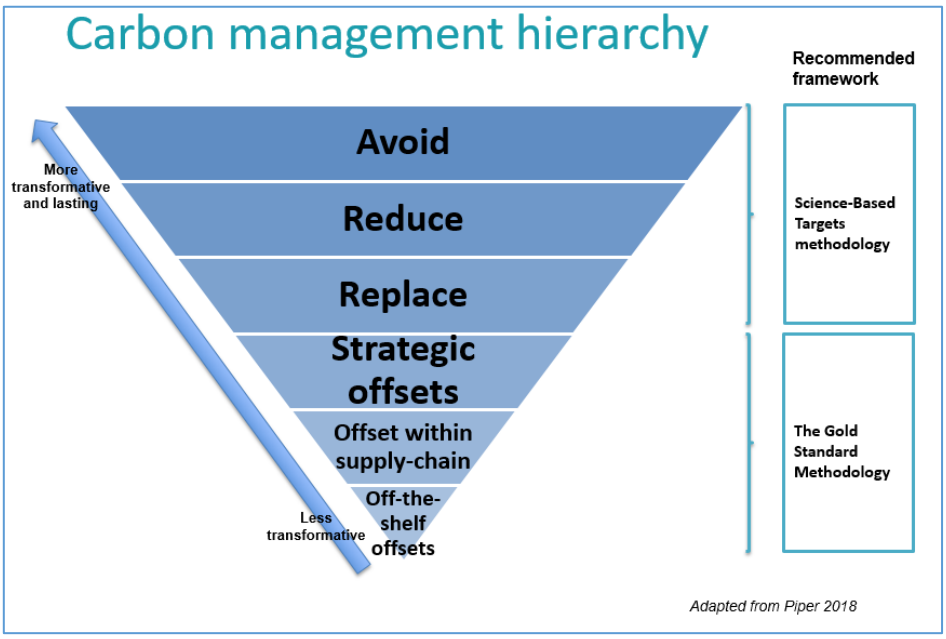
3. Carbon and Energy Management Plan: Guiding principles and standards

To ensure we maintain the highest methodology and standards, the Carbon and Energy Management Plan is guided by:

- The Carbon Management Hierarchy
- Science Based Targets
- The GHG Protocol
- PAS 2060: Carbon Neutrality Standard

Carbon management hierarchy

The route to net zero carbon will follow the carbon management hierarchy.



Guided by the carbon management hierarchy, we will:

- Avoid energy consumption. This means avoiding the use of energy and carbon intensive activities where possible. E.g. do we need to make a trip? Can we improve estate consolidation and make more effective use of space?
- Reduce consumption. How can we operate more efficiently? Are there opportunities to improve controls, or upgrade equipment?
- Replace energy sources. Through generation of low or no carbon energy or purchasing accredited renewable energy.

- Strategic offsetting. This is engaging with offsets, or carbon compensation, in a way that has a deeper value to UWE – perhaps in academic research or linked to the university in another way.
- Offset within supply chain. This may be offsetting at the point of purchase – for example per flight through the travel company.
- Off-the-shelf offsets. There are a whole variety of offsetting schemes available whereby organisations can purchase offsets equivalent to carbon emissions.

All these are outlined in more detail below. Emissions are to be avoided, reduced and replaced before offsetting is considered.

Science-based Targets methodology

We will set carbon reduction targets in line with climate science, ensuring that we play our part in international efforts to limit global temperature to 1.5° rise above pre-industrial levels.

The targets set in this manner are absolute, and can not be achieved through offsetting.

GHG Protocol

We acknowledge and take responsibility for our full carbon impact by including Scope 1 (direct emissions onsite), Scope 2 (indirect emissions from purchased electricity consumption) and Scope 3 (other indirect emissions, such as supply chain, staff and student travel, waste and water, etc.) emissions in the net-zero carbon target. Becoming carbon neutral means addressing all Scopes, in line with the Greenhouse Gas Protocol (https://ghgprotocol.org/). Here after carbon is taken to mean emissions of carbon and other greenhouse gases.

The Greenhouse Gas Protocol defines three scopes of emissions as follows

- Scope 1 (direct emissions onsite – e.g. from gas consumption, refrigerant gases, and transport emissions from fleet energy use)
- Scope 2 (indirect emissions from purchased electricity consumption)
- Scope 3 (other indirect emissions, such as supply chain, construction, staff and student travel, waste and water, etc.)

Scope 1 and 2 emissions are calculated using the Greenhouse Gas Protocol methodology. Data is sourced from utility meters, invoices, automatic metering, refrigerant gas maintenance records, and fleet fuel records. Carbon conversion factors are published by the Department for Business, Energy & Industrial Strategy (DBEIS). The most recent are for 2019 and are available at https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2019 . Tenanted areas that are metered are removed from Scope 1 & 2 and included in Scope 3. A full Schedule of Emissions is reviewed annually Carbon emissions for electricity are shown as both "market based" and "location based" emissions – market shows as net-zero emissions for campus electricity due to UWE purchasing 100% renewable electricity. Location shows emissions as per the present carbon emissions on the national grid. Both need to be presented in line with GHG Protocol requirements.

Scope 1 and 2 includes electricity and gas used in offices and teaching spaces owned or leased by the university in the UK and any UWE buildings or office space overseas; emissions from UWE owned vehicles; and emissions from refrigerant gases used on site.

Scope 3 includes greenhouse gas emissions associated with:

GHG category relevant to UWE		Application to UWE
1	Purchased goods and services	Emissions arising from the processes required to make the products and services that UWE purchases across the supply chain e.g. equipment, materials, professional services, etc.
2	Capital goods	Emissions arising from the processes required to make the products and services from UWE capital goods spend across the supply chain e.g. furnishings, building upgrades, stationery, computer equipment and software, etc.
3	Fuel-and-energy-related activities (not already included in Scope 1 & 2)	Emissions arising from the processes required to extract purchased fuels and purchased electricity and to account for transportation losses of purchased electricity. Emissions from utility consumption from staff home working (2020 onwards)
4	Upstream transportation and distribution	Transportation and distribution of 3rd party courier services purchased by UWE.
5	Waste generated in operations	Disposal and treatment of waste generated on campus.
6	Business travel	Transportation for business and academic trips (e.g. conferences). Includes flights, land travel and hotel stays.
7	Employee commuting	Transportation of staff and students between their term-time addresses or homes and campus. **Note:** to include EV charging when data allows.
11	Use of sold products	Journeys taken by students to reach their term-time addresses at the start/end of term. **Note:** not included in 2018/19 footprint due to lack of data.
13	Downstream leased assets	Operation of UWE's buildings leased to third parties, not already included in Scope 1 & Scope 2.

PAS 2060: Carbon Neutrality

For a number of years, claims of products, services or companies being "carbon neutral" have not been based on a common set of standards, and so have led to scepticism about what it really means. In response to this, and to restore integrity to the carbon neutral concept, PAS 2060 was developed by BSI in 2010 to establish a common definition and a recognised method of validation for organisations claiming to be carbon neutral.

Principles of PAS 2060:

- Transparency and accountability
- Based on existing public standards and credible sources
- Neutrality by reduction alone is impossible
- Neutrality by compensation (e.g. offsetting) alone is not credible

PAS 2060 requires that the total amount of residual carbon emissions be offset by high quality certified carbon credits that meet the following criteria:

- They are within one of the schemes approved by PAS 2060 (e.g. Clean Development Mechanisms, or Voluntary Carbon Standard).
- They have additionality (i.e. carbon reductions that would not have occurred were it not for the project being financed).
- They are verified by an independent third party to ensure that emissions reductions are permanent, avoid double counting and prevent leakage (i.e. emissions are not increased in another area as a result of a project activity).
- Credits are retired from a public record within 12 months. Offsetting total residual emissions will bring the emissions down to net zero.

4. Focus areas of the Carbon and Energy Management Plan

Energy reduction

Energy reduction remains a crucial focus of the Plan – ensuring that the university is operating efficiently. Reduced energy not only saves money from procurement, but also reduces any residual offsets that will have to be purchased to achieve net-zero. When reporting to the GHG Protocol market-based methodology, electricity from REGO backed or direct purchase (PPA) renewable electricity is reported as zero carbon. A target and performance indicator based on energy consumption will ensure that UWE keeps on track with energy efficiency requirements in addition to carbon reduction.

Carbon reduction

This Plan outlines the overall scope of the UWE carbon emissions; detailing Scope 1 & 2 in Sections 5 (Past and Current Performance), 6 (Targets & KPIs) and 7 (Route to 2030); and Scope 3 in the following secions 8 (Past and Current Performance), 9 (Targets and KPIs) and 10 (Route to 2030).

This Plan provides a place to capture the full carbon emissions of UWE, and sets out the mechanisms required to monitor, report and manage the university's net-zero trajectory as a whole.

This Plan details the Actions required to reduce Scopes 1 and 2, signposting Scope 3 emission reduction to the other relevant University Sustainability Plans, recognising the broader responsibilities entailed in achieving carbon reductions in Scope 3 areas. (Relevant carbon reduction actions from other plans are included in Appendix 3).

Energy management

Improving the management of energy throughout the university still offers significant opportunities, with baseload of buildings high, and large potential to manage energy more effectively through working closely with faculties and professional service areas to encourage and empower others to take greater responsibility for energy consumption around campus. Opportunities to reduce demand at peak periods are open to exploration and will contribute to cost savings.

Cost savings

Traditionally the business case for energy and carbon reduction projects have been based on payback periods. This has served UWE well, ensuring that the low and no-cost measures have been tackled first. We recognise that as time goes on, relying on the "payback period" of energy and carbon reduction projects becomes harder to justify, as the "low hanging fruit" is picked. As we strive to net-zero, the payback period justification will no longer be adequate as a measure of project feasibility or success, and instead will focus on a carbon

reduction amount. We will be looking at "opportunity missed" costs from not implementing energy (or carbon) saving measures within projects and refurbishments. These will reflect increased ongoing operational costs as a result of the missed opportunity, plus the cost of mitigating the additional ongoing carbon emissions from this.

Costing what is "additional" to a "standard" project will also be reframed from 2020, with gas boilers no longer seen as "business as usual" as installing gas boilers can no longer be seen as a viable option in a university that is both responding to the climate emergency and contributing to the the UK carbon reduction goals.

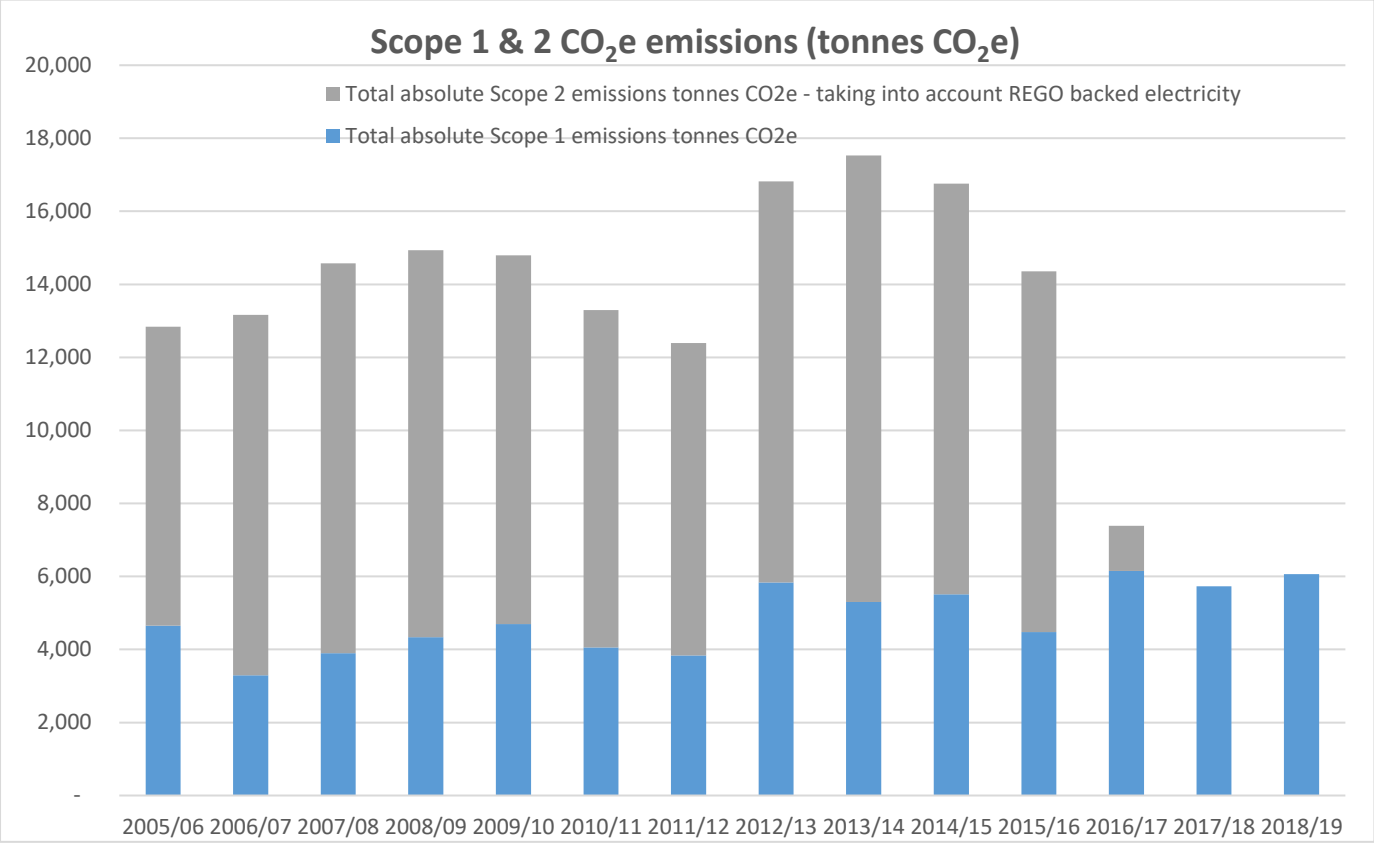
5. Scope 1 & 2: UWE carbon emissions past and current performance

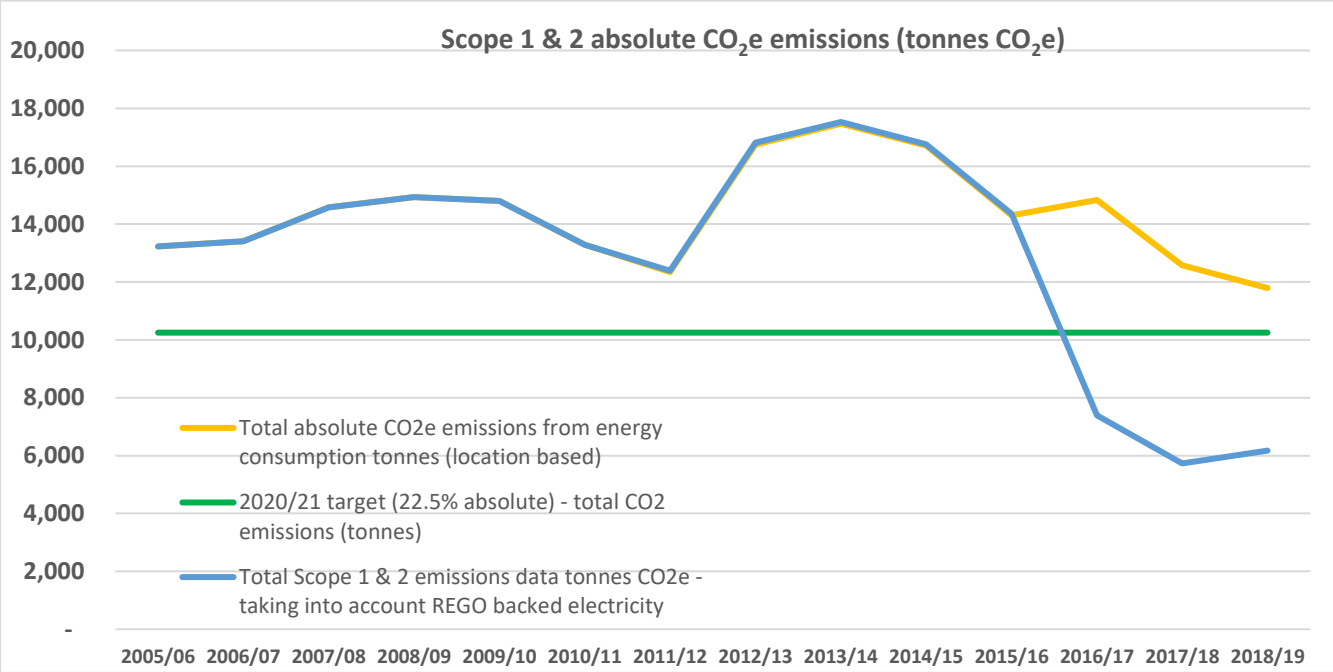
Scope 1 and 2 carbon emissions since 2005 have reduced by 48% due to a number of factors:

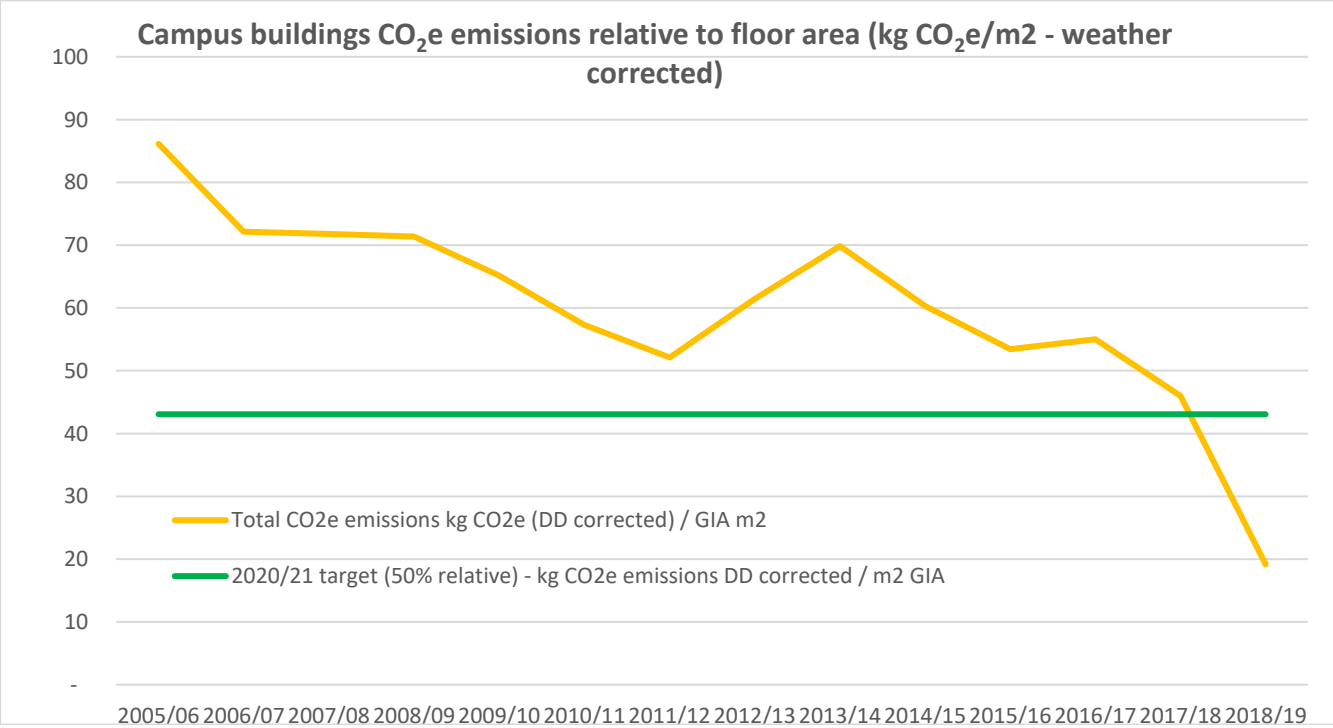
- UWE decision to purchase renewable electricity
- Energy efficiency projects to reduce utility consumption

Against a growth backdrop:

- 10% increase in FTE staff and student numbers
- Floor area of campus buildings almost doubling (increased by 96%)




Scope 1 & 2 absolute CO_2e emissions (tonnes CO_2e)
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
Total absolute CO2e emissions from energy consumption tonnes (location based)
2020/21 target (22.5% absolute) - total CO2 emissions (tonnes)
Total Scope 1 & 2 emissions data tonnes CO2e - taking into account REGO backed electricity
2005/06 2006/07 2007/08 2008/09 2009/10 2010/11 2011/12 2012/13 2013/14 2014/15 2015/16 2016/17 2017/18 2018/19


Campus buildings CO_2e emissions relative to floor area (kg CO_2e/m2 - weather corrected)
100
90
80
70
60
50
40
30
20
10
-
Total CO2e emissions kg CO2e (DD corrected) / GIA m2
2020/21 target (50% relative) - kg CO2e emissions DD corrected / m2 GIA
2005/06 2006/07 2007/08 2008/09 2009/10 2010/11 2011/12 2012/13 2013/14 2014/15 2015/16 2016/17 2017/18 2018/19

Recent energy reduction projects

Since the last Carbon Management Plan was approved in 2013, £1m pa has been available to invest in carbon management projects. Over the past few years, projects have included:

- Installation of the district heating network and two 400kWe CHP engines which will meet 35% of the heating requirements for the Frenchay Campus and 21% of electricity on site. Savings expected are 700 tonnes CO_2 per year.
- Installation of 450 kWp solar electric array on T-block, saving around 144 tonnes CO_2 per year, and £60,000.
- LED lighting upgrades with improved controls have taken place in various buildings and external areas on all campuses. So far these projects have delivered over 283 tonnes CO_2 savings per year.
- Other projects include:
    - Recommissioning of heating controls in Student Village
    - Pipe lagging and valve insulation throughout Frenchay
    - Installation of motor controls on catering fridges/freezers throughout UWE
    - Window draught-proofing throughout Glenside
    - Installation of BMS in Nursery Building

6. Scope 1 & 2: Targets & KPIs

2030 Targets

The baseline year for carbon emissions is 2018/19 as the last full year of data pre-disruptions due to Covid-19.

UWE have adopted a market-based approach for reporting Scope 2 figures (i.e. reflecting the purchase of renewable electricity).

Scope 1	tCO_2e
• UWE purchased gas	5,794.3
• UK gas (not purchased by UWE)	14.5
• International gas (not purchased by UWE)	4.8
• R407c: refrigerant gas	84.1
• R410a: refrigerant gas	229.7
• HFC134a: refrigerant gas	6.3
• Diesel used by UWE_owned fleet	24.7
• Petrol used by UWE_owned fleet	5.4
• Diesel used by grounds team	11.3
Total	**6,175**

Scope 2	tCO_2e
• UWE purchased grid electricity – REGO backed	-
• UK based electricity – not renewable	29.3
• International electricity – not renewable	6.7
• Onsite electricity generated from PV arrays	-
Total	**35.92**

In line with Science Based Targets, UWE commit to an absolute reduction in line with 1.5 degrees of 46.2% to 2030 for Scope 1 & 2 (market based) against a 2018/19 baseline.

The trajectory for this absolute reduction is based on a 4.2% reduction per year as follows:

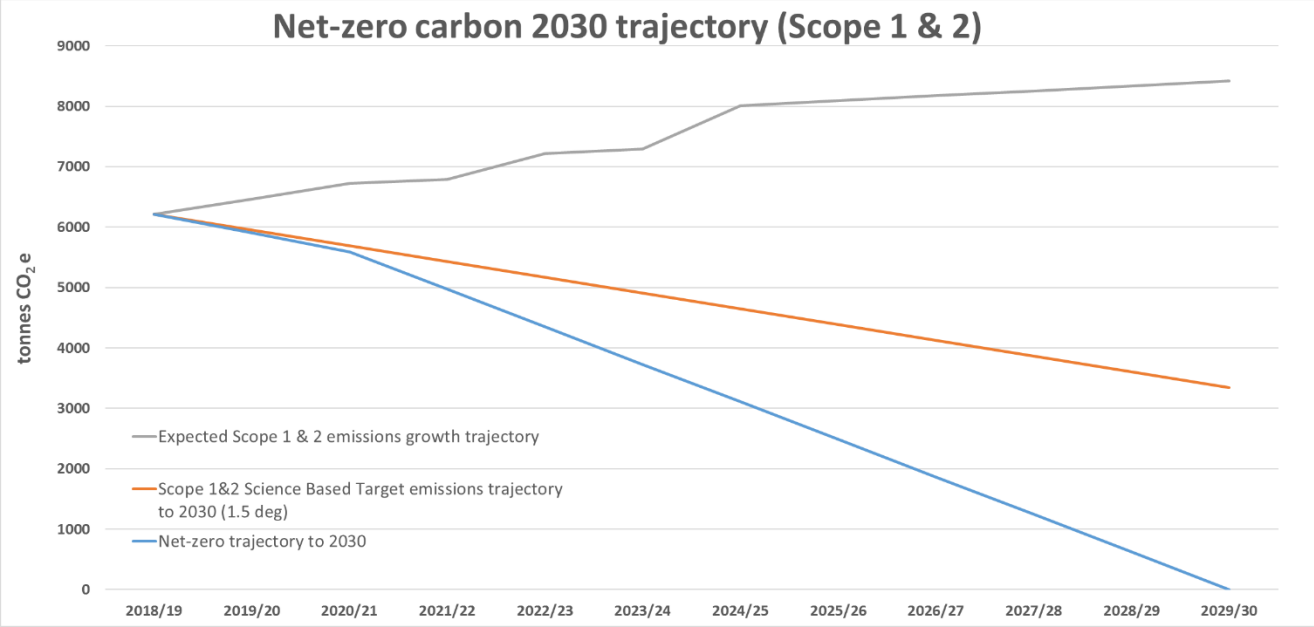
	Science based targets		Net-zero carbon targets	
Year	Absolute tCO_2e	Reduction from baseline	Absolute tCO_2e	Reduction from baseline
2018/19 (baseline)	6,210.99	-	6,210.99	-
2019/20	5,950.1	-4.2%	5,900.4	-5%
2020/21	5,689.3	-8.4%	5,589.9	-10%
2021/22	5,428.4	-12.6%	4,968.8	-20%
2022/23	5,167.5	-16.8%	4,347.7	-30%
2023/24	4,906.7	-21%	3,726.6	-40%
2024/25	4,645.8	-25.2%	3,105.5	-50%
2025/26	4,385.0	-29.4%	2,484.4	-60%

2026/27	4,124.1	-33.6%	1,863.3	-70%
2027/28	3,863.2	-37.8%	1,242.2	-80%
2028/29	3,602.4	-42%	621.1	-90%
2029/30	3,341.5	-46.2%	0	-100%

This is illustrated below, with the projected carbon emissions (growth) shown in grey, and the science-based target in orange. For UWE to meet the Science Based Target, we must reduce carbon emissions by at least the trajectory each year. Of course the UWE commitment is for net-zero carbon by 2030 (shown in blue). The Science-Based target is an absolute target, with further carbon reduction measures being allowable beyond this to achive net-zero (e.g. offsetting, insetting or other forms of carbon compensation).

Science Based Targets must be reviewed at least every 5 years to align with the latest methodologies.

During the activities in Year One, a clearer reduction pathway will be outlined, which will represent the programme of works, and carbon reductions accountable year per year rather than a straight line trajectory. This will be presented within the Carbon Roadmap, showing clear projects, timelines, savings and costs.



KPIs

Key performance indications that will be reported on for Scope 1 & 2 are:

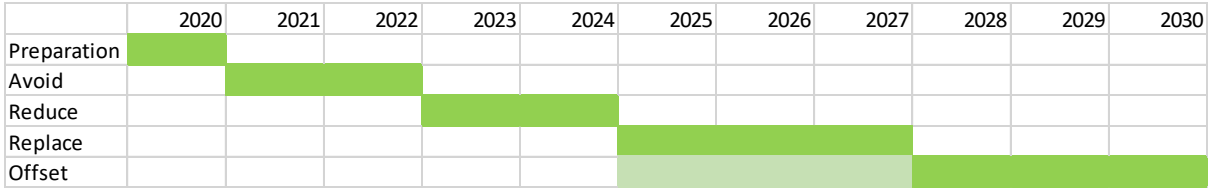
Focus	KPI	Data required	Responsibility	Reporting to
Annual relative carbon emissions	Annual total of carbon emissions (scope 1,2,3) per capita (staff and students), tCO_2e/FTE	a. Energy data carbon emissions b. Scope 3 carbon emissions c. Staff FTE numbers d. Student FTE numbers	Energy Team collate data from: a. Energy team b. Sustainability Team c. HR d. UWE Business Intelligence	Sustainability Board Directorate
Annual absolute carbon emissions	Annual total of carbon emissions (scope 1,2,3), tCO_2e	a. Energy data carbon emissions b. Scope 3 carbon emissions	Energy Team collate data from: a. Energy team b. Sustainability Team	Sustainability Board & Campus 2030
Scope 1 & 2 absolute carbon emissions	Annual total of carbon emissions (scope 1,2), tCO_2e	Energy data Fuel data Refrigerant gas data	Energy Team	Sustainability Board & Campus 2030
Scope 1 & 2 relative carbon emissions	Annual total of carbon emissions (scope 1,2) weather related, tCO_2e	Energy data Fuel data Refrigerant gas data Degree Day data	Energy Team (refrigerant gas from Maintenance)	Sustainability Board & Campus 2030
Efficiency	Annual total of carbon emissions (scope 1,2) per m^2 GIA. tCO_2e/m^2	As above plus annual GIA	Energy team (GIA from Space Planning)	Sustainability Board & Campus 2030
Energy intensity	Annual energy consumption per m^2 GIA, kWh/m^2	Energy (electricity and gas) consumption data	Energy Team	Sustainability Board & Campus 2030
Renewable generation on site	Annual renewable generation related to total consumption (% renewable to total)	Generation data Total consumption data	Energy Team	Sustainability Board & Campus 2030

7. Scope 1 & 2: Route to 2030

Route to 2030

Focus will be made on the higher levels of the carbon management hierarchy in the earlier years, working towards full net-zero carbon status towards 2028.

Reductions that are not made will result in higher levels of carbon to offset in future years, hence higher annual costs. Offsetting cannot be used to meet the science based targets, so carbon avoidance and reduction must occur.



Focus area	Project	Overview	Outcome
Avoid	Space utilisation review	Understand how the campus is used throughout the 24 period and annual cycle. Understanding footfall, use of rooms and activities.	Consolidate use of campus, ensuring efficiency of space utilisation. Minimise areas open 24/7.
Avoid	Building efficiency survey	Full campus building condition and energy surveys to identify: • Fabric and design improvement opportunities; • Inefficient plant and fittings; • Improvements to controls. Improving the fabric of the current buildings will ensure they are future ready for the installation and operation of heat pumps as the sites are decarbonised.	Fully costed campus development programme. To feed in to refurbishment programmes, or implemented as standalone projects. Full visibility of energy performance of UWE building stock.

Focus area	Project	Overview	Outcome
		Use of Energy Management Software will help identify highest priority buildings.	
Avoid	Net zero carbon campus developments	All new buildings will have net zero carbon operation embedded as a core principle. All future campus development projects will meet recognised sustainability accreditations, criteria and targets in order to achieve this. This will be outlined in a revised sustainability section to the Design Guide. All new buildings and refurbishment projects to have full assessment and energy modelling and will consider whole life costing. During reburbishment projects, the opportunity will be taken to make estate improvements in line with the recommendations from the condition and energy surveys. Estates & Facilities will work closely with Faculties to assess how to meet the required need of the client in line with this process. Understanding the carbon implications of climate adaptation requirements in new build / refurbishments, considering increased summer temperatures (increased need for mechanical or passive ventilation) and need for increased thermal insulation. Include requirements in Design Guide. Training for UWE staff involved with new build and refurbishments (including from Faculties) will ensure that there is a common understanding of	Revised Design Guide with clear sustainability principles and requirements for accreditation for different projects. Staff with high levels of competency and confidence to ensure the development of a low carbon estate.

Focus area	Project	Overview	Outcome
		sustainability requirements and project critical success factors. Engagement with Campus 2030 Board outlining responsibilities in relation to achieving net-zero carbon target.	
Avoid	UWE internal carbon pricing mechanism	Putting an internal cost to carbon at UWE: An internal carbon pricing mechanism will be explored, with the potential to be introduced across the university where carbon emissions occur. Explore the means for new builds to be designed and operated to net-zero carbon, with any shortfall paid as an offsetting cost to contribute to a Campus Carbon Fund.	Proposal of internal carbon pricing mechanism to create a fund to invest in low carbon infrastructure across campus.
Avoid	Net zero carbon campus operations	Ensure all campus development projects have full softlandings and post occupancy evaluation implemented to avoid performance gaps, and ensure full user satisfaction.	Ensure optimised energy performance of buildings, and user satisfaction.
Avoid	Efficient IT and other equipment on site	Ensure equipment is switched off when not in active use. This needs to be considered during purchasing, and operation of equipment.	No equipment is on when not being actively used.
Reduce	BMS Controls optimisation	Continue to optimise use of BMS with close working with BMS Manager.	Reduced use of energy for heating, cooling and ventilation.
Reduce	Intelligent Buildings / Smart campus	Creating the infrastructure to link real-time occupancy with the BMS to control heating, cooling and ventilation across campus according to actual requirements.	Reduced use of energy for heating, cooling and ventilation whilst ensuring maximum student comfort.

Focus area	Project	Overview	Outcome
Reduce	Metering and Energy Management Systems	Continue to develop the metering system and energy management software to improve visibility of anomalies, excessive consumption, changes in trends, and improve monitoring and measuring.	Reduced energy consumption.
Reduce	Climate Action Programme	The Climate Action Programme is an engagement and empowerment programme to improve operational management through cultural change. The objective of the Climate Action Programme is to ensure all parts of the University contribute to carbon reduction. The a key responsibility of the Carbon Action Manager is to drive this programme forward. This will be achieved by: • Raising awareness of consumption through use of performance metrics of carbon emissions; • Empowering departments and individuals to take action; • Providing feedback to encourage continued engagement; • Securing commitment from across UWE Bristol.	Improve sustainability impact of all departments. Over time this will extend to include the supply chain.
Reduce	Carbon Literate Community	Mandatory Carbon Literacy Training for all staff, and all students (rolled out over time) to support the development of capability, confidence and capability to understand and act on the carbon consequences of actions and decisions.	Understanding across UWE how UWE activities impact the carbon footprint of the organisation. Contribute to local Action Plans to reduce

Focus area	Project	Overview	Outcome
		A set of advice, guidance and support will ensure that those with additional roles and responsibilities are aware how these impact on UWE carbon emissions.	carbon emissions. Enable change throughout UWE organisational systems and processes. Over time this will extend to include the supply chain.
Replace	Decarbonise campuses (remove gas boilers)	Decarbonising the UWE estate is the largest challenge to 2030 for utility management. This will require removing all fossil fuel boilers and replacing them with low and zero carbon heating and hot water systems. This will be through a mix of extending the district heating network on the Frenchay campus to include more buildings; with the addition of ground source, water source (from disused mine shafts or bore holes), or air source heat pumps to provide heat into the system. Any waste heat from cooling systems around the campus should be captured into the network. Where it is not viable to extend the heat network, buildings may have stand-alone heat pump systems. Certain buildings will require significant fabric and insulation upgrades to be suitable for these systems. The carbon saving case for use of the CHP will deteriorate over time, although the financial savings remain. Adding alternative heating sources to the heat network will allow the future replacement of the CHP and / or using green gas or converting to hydrogen. The Frenchay heat network will be sized to enable connection to a wider district scheme should this be a future option.	Creation of fossil fuel free campus.

Focus area	Project	Overview	Outcome
		At Glenside, the reservoir and disused mine shafts offer potential opportunities to use water source heat pumps to heat the buildings and hot water. Significant work to link heating systems will need to be undertaken, as well as fabric and insulation improvements. Bower Ashton campus (other than F block) is already fed from a central boiler room. An existing incoming heat connection on the edge of campus could be connected to a future local heat network, making use of heat from waste water being developed by Bristol City Council. Bush House in Central Bristol is close to one of the City heat networks in development. Again, UWE are in discussion with Bristol City Council as to the potential timescale of this development.	
Replace	Electricity generation	The use of heat pumps, and electric vehicle charging on site will bring additional electricity demands to site. The CHP generates low carbon electricity whilst providing heat across the West side of campus. There is potential for increasing renewable generation both on- and off-site.	Increased generation of renewable electricity.
Replace	Purchase renewable electricity	We will continue to directly purchase off-site zero carbon electricity through power purchase agreements, currently at 20% of incoming electricity. The remaining electricity requirements will be	Zero carbon electricity purchase

Focus area	Project	Overview	Outcome
		purchased through Ofgem's Renewable Energy Guarantees Origin (REGO) backed schemes.	
Replace	Purchase renewable gas	We will continue to explore the potential to purchase certified green gas whilst the campuses transitions to a fossil fuel free operation.	Zero carbon gas purchase
Replace	Decarbonise vehicle fleet	Replace vehicle fleet with electric power.	Ensure fossil fuel free campus. Contribute to Clean Air Campus target.
Offset	In-house offsetting / "insetting"	The introduction of soft offsetting fiscal measurements through departments will be explored and tested as a means to raise awareness of carbon intensive choices, and create a fund for investing in carbon reduction or replacement projects.	Create fund for reinvestment in net zero carbon projects. Also raise awareness of carbon impact of choices in departments.
Offset	Purchase market offsets	Recognising that there will be residual emissions, offsetting will be in line with PAS 2060 and considered according to strict criteria relating to locality, project type and benefit to the university. All offsetting will be purchased centrally rather than through supply chain purchases to ensure that high standards and full accountability of offsetting are achieved.	Enable UWE to achieve net zero carbon status through offsetting residual emissions.
Cross-cutting	Campus Living Lab	Ensure that energy data is available to academics and students as a Living Lab. Encourage energy projects on site (behavioural and technical). Engage academics and students in operations and projects where possible. Ensure we tap into leading research available through academics for the operation of our estate.	Provide resource for students, with mutual benefit of more eyes on UWE data, and extra resource working on net zero carbon efforts.

Focus area	Project	Overview	Outcome
Cross-cutting	Climate Adaptation and Strategy	Assess and plan adaptation requirements. Understand impacts on future carbon of increased mechanical ventilation requirements.	Embed into Design Guide

Action Plan Year 1 & 2:

The Action Plan with associated costs is included in Appendix 4 (for internal use only).

Planned actions 2020/21	Purpose
PREPARATIONS	
Survey of existing buildings, assessing costs and energy saving potential: • Frenchay campus • City campus • Glenside campus	To identify energy efficiency and renewable projects, cost and feasibility that can be prioritised and implemented.
Decarbonisation masterplanning Campus 2030 project: feasibility projects: • Frenchay: GSHP, MWHP. Potential of connection to wider DHN • Glenside: MWHP, WHP (reservoir) • Bower Ashton: SWHP in local DHN • Bush House: connection to city-wide DHN	To identify fossil fuel decarbonisation projects and costs that can be prioritised and implemented.
Feasibility for cladding A-N and improving fabric to EnerPHit standards	To identify costs and opportunities around this project.
Next stage of Wind feasibility (if passed initial feasibility stage)	To identify full costs and potential of wind turbine at Hillside Gardens.
Next stage of Frenchay PV feasibility (if passed initial feasibility stage)	To fully cost and assess feasibility of PV installations on Frenchay campus.
Tie up feasibility projects above into full decarbonisation master plan	To map out fully costed plan to achieve net-zero by 2030.

Survey Bush House to assess works required to successfully link to city heat network.	To assess Future Ready status if connect to city heat network.
Full consultation with campus board.	To ensure the projects identified in the feasibility works to achieve net-zero are embedded into programmes.
Seek clarity on Estates Strategy moving forward with plans for buildings and campus developments.	To ensure decarbonisation plan is directed as required for cost- and carbon- effective actions.
Cost out and present detailed decarbonisation plan to Campus 2030, Sustainability Board and Utilities Management Group for full leadership committment.	To get full approval and budget to implement plan.
Establish and present mechanics of UWE internal carbon pricing mechanism for new build, and potentially refurbishment projects.	To get approval to implement internal carbon pricing mechanism.
INSTALLATIONS	
Install Student Village heating upgrade and controls (part 2/2)	To reduce energy consumption; improve student experience; improve flushing controls.
Transformer upgrades (x2)	To reduce energy consumption; improve resilience of campus infrastructure.
Develop utility meter strategy, with further installations, and monitoring / reporting system	To allow greater management of utilities, and ensure early notification of abnormal consumptions. Improved forecasting and reporting across faculties.
Enterprise Park external lighting upgrade (LEDs and controls)	To reduce energy consumption.
Further projects to be identified through the year.	To reduce energy consumption across campuses.
PROCESS DEVELOPMENT	
A Governance review to be completed within the first year of the Plan.	To achieve a simpler and clearer means of reporting on progress, risks and opportunities will
Specify UWE specific standards for new build and refurbishment through Design Guide review.	To give clear direction to ensure campus is future ready and net-zero initiatives embedded in projects.
Specify 10 year trajectory of carbon metrics to use for all project investment calculations.	To give level playing field of metrics to use to assess life cycle carbon.

Design and develop Facilities Sustainability Dashboard / Carbon Matrics database for bringing together carbon emission from all scopes.	To streamline in-house reporting of carbon emissions.
Form Space Management Group	To ensure an ongoing focus of estate optimization.
Campus space utilisation review (24/7 campus rationalisation).	To avoid excessive energy consumption; improve H&S; reduce security costs; reduce cleaning costs; improve student experience.
BMS optimization through improved settings.	Reduce energy consumption through improved controls, through monitoring and reviewing BMS settings.
Intelligent Buildings (IoT) – test out some means of linking smart building technology to BMS settings.	To assess the potential for this to make savings in future years.
Include incentive within term maintenance contract for energy efficiency and innovation.	To ensure term maintenance contractors contribute to energy reduction across all sites. Opportunity with contract review due.
Review how to include terms in building lease contracts for the purchase of REGO-backed renewable energy and energy reduction measures.	To ensure that the Scope 3 impact of leased buildings is managed.
Review Purchasing procedures	To ensure energy efficiency is considered for all energy consuming equipment purchases.
Review Energy Policy	To ensure fit for purpose with 2030 ambition.
Review Heating Policy	To ensure fit for purpose with 2030 ambition.
Utilise Student Village heating controls for demand side management benefits	To reduce utility invoices, and demand on the grid.
ENGAGEMENT	
Engage with IT.	To ensure IT equipment is off when not actively in use.
Carbon literacy training for all staff and students.	To empower staff and students to reduce carbon emissions.
Climate Action engagements	Encourage creative responses to Climate emergency.
Further engagement outlined in Climate Action Programme	

Planned actions 2021/22	**Purpose**
PREPARATIONS	
Establish clear criteria for Carbon offsetting choices with route to procurement.	To establish how the procurement of carbon offsetting will be achieved, and identify and challenges.

Review catering use of gas on site	To understand the scale of the challenge to replace catering gas with electricity
INSTALLATIONS	
Projects for 2021/22 to be identified from the feasibility work completed in 2020/21	To ensure the most cost:carbon efficiencies are gained.
PROCESS DEVELOPMENT	
Continue to develop Scope 3 data quality and collection.	To ensure efficient collection of data with high accuracy.
Review Carbon Management Programme and target calculations	To ensure full plan is prepared and achievable going forward, taking into accounts developments and market changes.
ENGAGEMENT	
Focused training for managers and team leaders in key areas. Focused training for academic programme leaders.	To deepen opportunities for carbon reduction throughout UWE.
Establish clear control information system across campus for building controls and other equipment.	To ensure staff and students know what can and cannot be switched off and when. This will help to reduce the operating energy of all buildings across campus.
Continuation of Climate Action cafes and engagement.	
Further engagement outlined in Climate Action Programme	

Risks to achieving carbon targets

Risk	Impact	Mitigation measures
Expansion of estate	• Since the 2018/19 year that the Science-based targets are based on, UWE has purchased the Enterprise Park. This has significant carbon implications, of around 390 tonnes per year (Scope 1, 2 & 3). • Engineering building due for completion September 2020 • Student Accommodation Project Phase 1 starts June 2021 (net increase 629 beds) • Student Accommodation Project Phase 2 planned in next 3-4 years (additional 1620 beds)	Ensure all new developments have net zero carbon operation embedded as a core deliverable.

Failure to identify low zero carbon heat sources on campus	Reliance on electricity as source of heating – which whilst is low carbon, will be an expensive option.	Ensure exploration for heat sources is completed early on in the campus development to ensure flexibility in approach, maximise efficiencies, and ensure infrastructure is developed in appropriate sequence.
Funding not available	Ten years is a huge challenge to achieve this target within. Any delay in funding each year will have a large knock-on effect on future years to be able to achieve the targets.	Clear discussions with Finance Director with cash flow outlines as early as possible.
Risk management measures nullify (or reverse) energy saving efforts	Measures put in place to manage risks such as Covid-19 and legionella have an adverse impact on energy consumption.	Work with H&S and Maintenance teams to regularly review measures in place, taking into account the latest scientific and academic research.

8. Scope 3: UWE carbon emissions past and current performance

To date, data collected for the HESA returns has been utilized to report on Scope 3 emissions. For 2018/19 data onwards, this has been reviewed by a third party, to bring fully in line with the GHG Protocol. This now includes the impacts of all UWE international offices, and scope 3 areas outlined within the areas below. In addition, UWE are gradually refining the methodology of applying a carbon emission factor to different procurement areas based on spend data. Where more detailed data is available, this will be used in place. The aim is to gradually move away from financial measures to calculate carbon emissions. This will improve the accuracy of the carbon emissions of UWE activities. Using spend data as a means of calculating carbon emissions is not reliable. As an example, purchasing local organic vegetables would be less carbon intensive than purchasing vegetables from overseas, but may actually cost more. Thereby calculating carbon emissions with a broad brush CO_2/£ spent on each category (food, IT equipment, etc) will not be reflective of purchasing decisions made with carbobn reduction criteria in mind.

As improved methodologies are created, UWE will back-calculate Scope 3 emissions, using these updated methodologies.

Scope 3 includes greenhouse gas emissions associated with:

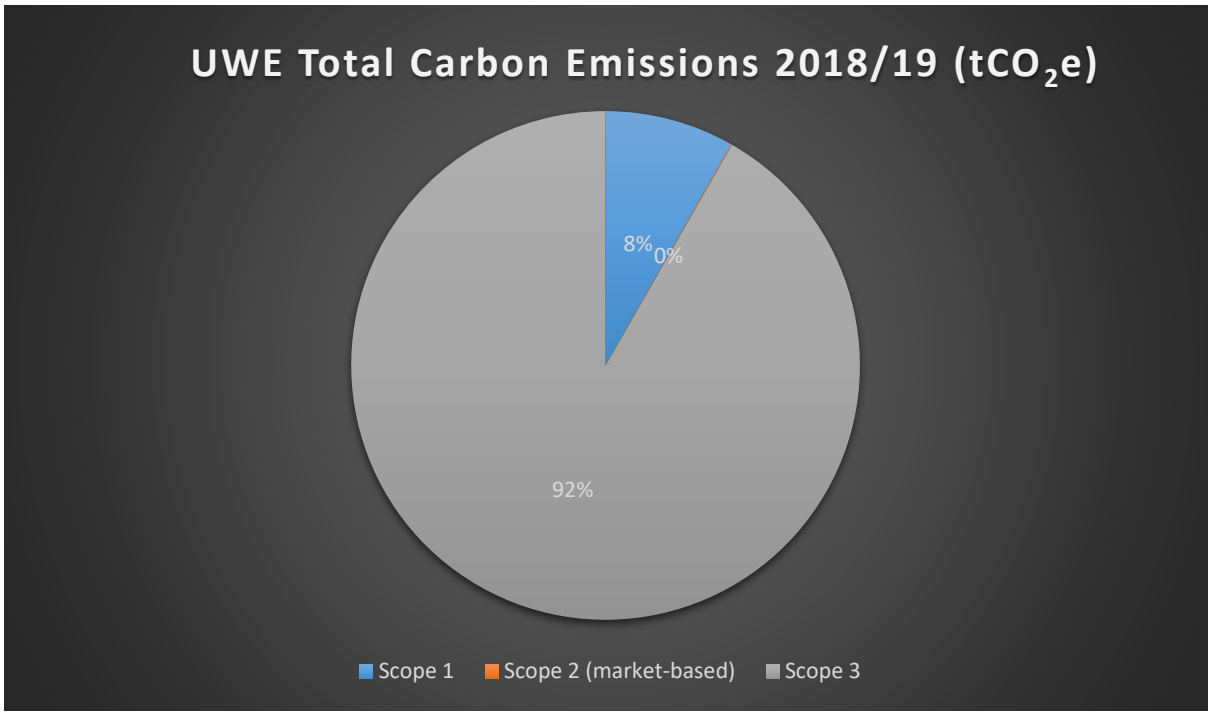
GHG category relevant to UWE		Application to UWE	UWE data collection methodology in place
1	Purchased goods and services	Emissions arising from the processes required to make the products and services that UWE purchases across the supply chain e.g. equipment, materials, professional services, etc.	Spend data for procurement. Water consumption records for water supply and treatment.
2	Capital goods	Emissions arising from the processes required to make the products and services from UWE capital goods spend across the supply chain e.g. furnishings, building upgrades, stationery, computer equipment and software, etc.	Spend data for procurement.
3	Fuel-and-energy-related activities (not already included in Scope 1 & 2)	Emissions arising from the processes required to extract purchased fuels and purchased electricity and to account for transportation losses of purchased electricity.	Electricity and fuel consumption records.

		Emissions from utility consumption from staff home working (2020 onwards)	
4	Upstream transportation and distribution	Transportation and distribution of 3rd party courier services purchased by UWE.	Spend data for procurement.
5	Waste generated in operations	Disposal and treatment of waste generated on campus.	Waste types, disposal routes and weights.
6	Business travel	Transportation for business and academic trips (e.g. conferences). Includes flights, land travel and hotel stays.	Spend data for procurement.
7	Employee commuting	Transportation of staff and students between their term-time addresses or homes and campus. **Note:** to include EV charging when data allows.	Estimated from Travel Survey. Student and staff headcounts.
11	Use of sold products	Journeys taken by students to reach their term-time addresses at the start/end of term. **Note:** not included in 2018/19 footprint due to lack of data.	Not included in 2018/19 footprint due to lack of data.
13	Downstream leased assets	Operation of UWE's buildings leased to third parties, not already included in Scope 1 & Scope 2.	Electricity and gas consumption records of leased buildings.

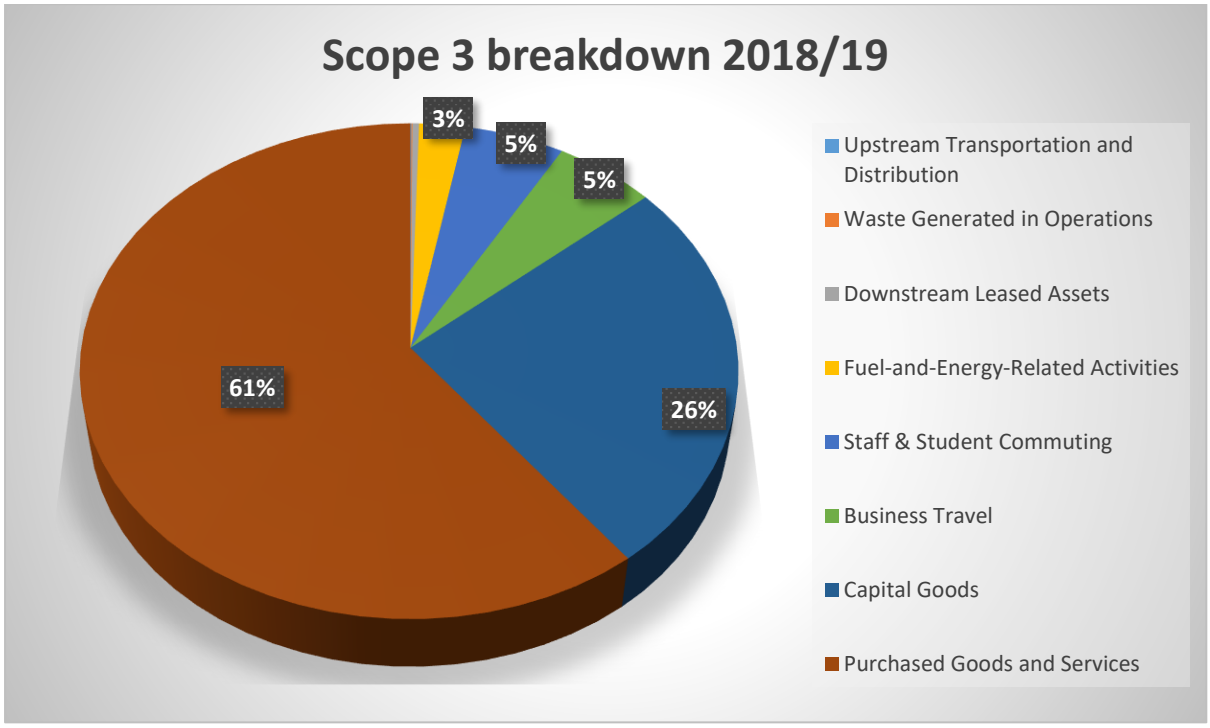
UWE total CO_2e emissions for 2018/19 are below. This forms the baseline year for carbon emissions is 2018/19 as the last full year data pre-disruptions of Covid-19.

The scale of Scope 3 emissions highlights how important this area is in tackling carbon emissions as a result of UWE operations.

	Tonnes CO_2e	**Percentage of total**
Scope 1	6,175	8%
Scope 2 (market based)	36	0%
Scope 3	68,794	92%
Total	**75,005**	**100%**



Breaking down Scope 3 into more detail, it can be seen that the purchase of goods, and capital goods amounts to 87% of Scope 3 emissions, with 10% accounted to travel and transport.



9. Scope 3: Targets and KPIs

2030 Targets

The overall UWE target to reach net-zero carbon emissions includes Scope 3.

A science-based trajectory and target will be established, as has been for Scope 1 & 2 once further modelling has been established (see *Section 10. Scope 3: Route to 2030* below).

KPIs

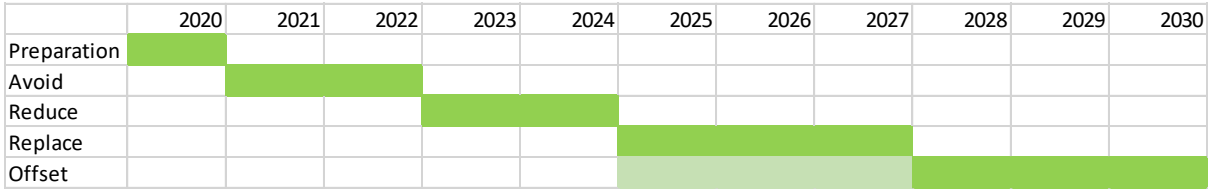
Key performance indicators that will be reported on for Scope 1 & 2 are:

Focus	KPI	Data required	Responsibility	Reporting to
Annual relative carbon emissions	Annual total of carbon emissions (scope 1,2,3) per capita (staff and students), tCO_2e/FTE	a. Energy data carbon emissions b. Scope 3 carbon emissions c. Staff FTE numbers d. Student FTE numbers	Energy Team collate data from: a. Energy team b. Sustainability Team c. HR d. UWE Business Intelligence	Directorate
Annual absolute carbon emissions	Annual total of carbon emissions (scope 1,2,3), tCO_2e	a. Energy data carbon emissions b. Scope 3 carbon emissions	Energy Team collate data from: a. Energy team b. Sustainability Team	Sustainability Board & Campus 2030
Breakdown of scope 3 absolute carbon emissions	Annual breakdown of Scope 3, tCO_2e	Scope 3 carbon emissions	Sustainability Team	Sustainability Board
Percentage of Scope 3 data reported on spend data	Annual percentage of carbon emissions within Scope 3 measured from spend data	Scope 3 emissions data	Energy Team / Sustainability Team	Sustainability Board

Related KPIs reporting on Scope 3 emissions are included in other Action Plans, as outlined in Appendix 3.

10. Scope 3: Route to 2030

Following a similar route to Scope 1 & 2, reducing Scope 3 emissions will follow the carbon hierarchy:



There is also work to be done upfront to further develop and improve data collection methodologies.

In the first year, this will focus on:

- understanding where data will be acquired from, and data quality.
- Gathering data.
- Setting clear science based target and trajectory by 2022.
- Outline clear roles and responsibilities (data collection, calculations, reporting, project management).
- Scope 3 working group to monitor progress.

Further details are outlined below.

A initial working group comprises of:

- Head of Sustainability
- Energy Manager
- Environmental Officer
- Asistant Vice-Chancellor, Environment and Sustainability

This working group will focus on process-based mechanisms: ensuring that there are accurate, reliable means to gather data to set targets and report on Scope 3 emissions. Actions to reduce emissions are largely covered in other Sustainability Action Plans as outlined below.

Action Plan	Scope 3 implications
Education for Sustainable Development	Climate awareness through the curriculum will have indirect benefits on student travel and purchasing decisions.
Clean Air	Co benefits from air quality actions.
Water Management	Associated carbon emissions from supply and treatment of water.
Travel	Direct and indirect benefits for Scope 1 (university vehicles) and 3 – business travel, staff and student travel to campus, etc.

Circular Economy	Aligning plan to deliver processes and procedures for understanding and implementing cope 3 carbon reductions.
Biodiversity	Exploring the potential for future insetting opportunities for on site carbon sequestration through tree and other planting projects.
Hospitality & Sustainable Food	Reducing the carbon impact of food served on campuses – Scope 3 actions to be quantified.
Partnerships for Climate Action	Working with local authorities, third parties and sector bodies to raise awareness, drive forward plans and deliver carbon reductions.

Additionally, cross-cutting activities will also be developed, around the concept of a UWE internal carbon pricing mechanism and stakeholder engagement,

Focus area	Project	Overview	Outcome
Avoid	UWE internal carbon pricing mechanism	Putting an internal cost to carbon at UWE: An internal carbon pricing mechanism will be explored, with the potential to be introduced across the university where carbon emissions occur. Explore the means for Scope 3 areas be designed and operated to net-zero carbon, with any shortfall paid as an offsetting cost to contribute to a Campus Carbon Fund.	Proposal of internal carbon pricing mechanism to create a fund to invest in low carbon infrastructure across campus.
Cross-cutting	Stakeholder engagement	Education, awareness and training through: • Climate Action Programme • Carbon Literacy training.	• Aim to embed distributed responsibility for carbon reduction activity. • Aim to develop a carbon literate community.

Focus area	Project	Overview	Outcome
Cross-cutting	Supplier engagement	To work with suppliers creating mechanisms: • to calculate carbon emissions of products and services purchased by UWE; • to reduce supplier / partner carbon emissions.	More accurate UWE Scope 3 calculations. Reducing supplier & partner Scope 1 & 2 emissions will result in reductions in UWE Scope 3 emissions.

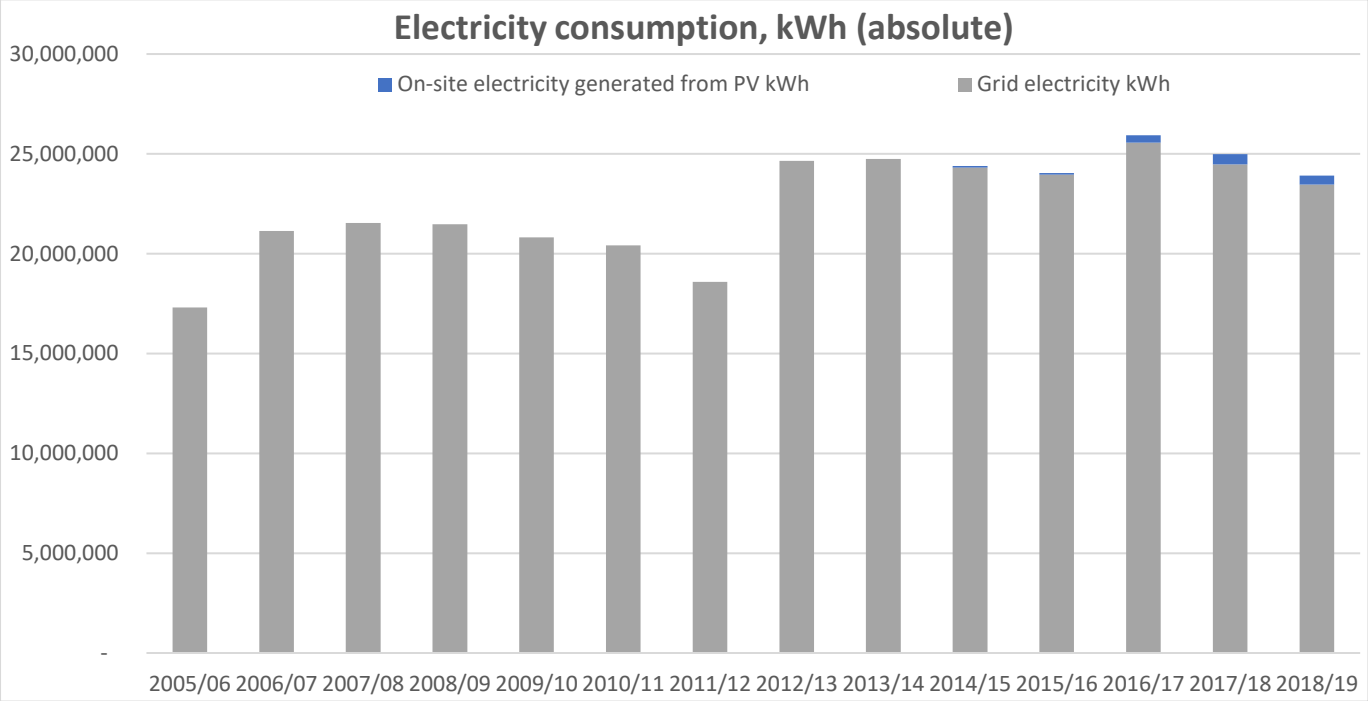
Action Plan Year 1:

Planned actions 2020/21	Purpose	Cost
Establish Scope 3 working group.	To drive forward carbon reductions in Scope 3.	Within staff time.
Clarify additional KPIs around supplier engagement.	To ensure useful performance indicators are included. To refine the spend-based calculation of CO2 so as to properly reflect reduction progress, and to exert influence on supply chain.	Within staff time.
Define clear Scope 3 targets and reduction trajectory to 2030.	To set clear targets to align with 2030 commitments, and in line with science-based principles. To relate to focus areas (e.g. percentage of suppliers engaged regarding sustainability.	Within staff time. Possibly also consultancy time for SBT.
Clarify roles and responsibilities of all areas where Scope 3 requires action, data collection, reporting and co-ordination.	To ensure sufficient resource is available to drive Scope 3 carbon reduction.	To be defined.
Improvements to data collection methodology throughout Scope 3 areas.	To enhance accurancy of measurement of UWE Scope 3 impacts.	Staff time – may require additional resource to facilitate this work.
Development of carbon metrics database	To enable full accountability of carbon emissions throughout UWE and monitor against targets.	Staff time
Establish mechanics of potential UWE internal carbon pricing mechanism exploring in	To get approval to implement UWE internal carbon pricing mechanism.	Staff time (see Travel Plan for further information)

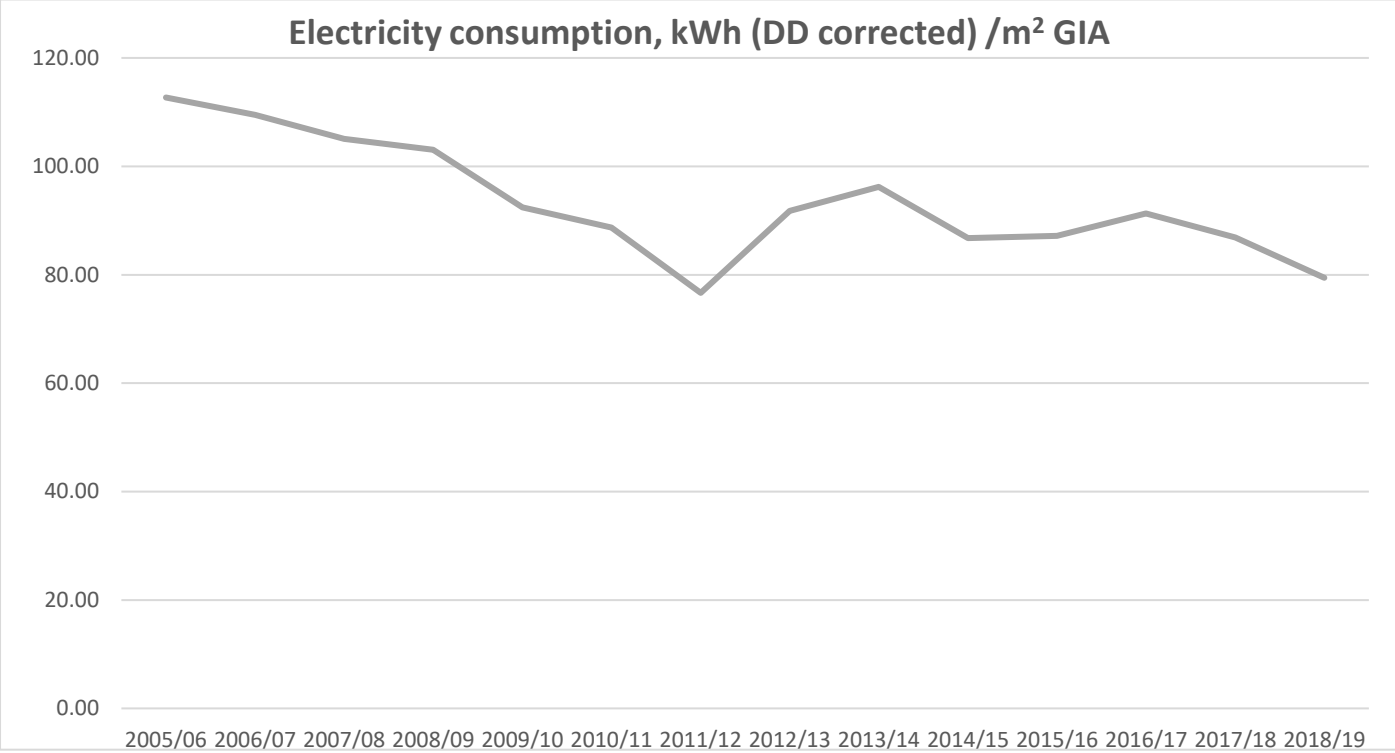
particular interest in aviation aspects).		
Stakeholder mapping of supplier and partners according to level of carbon intensity.	Intention to open collaboration with suppliers to decarbonse supply chains.	Staff time – may require additional resource to facilitate this work.

APPENDIX 1 – Historical Energy Consumption

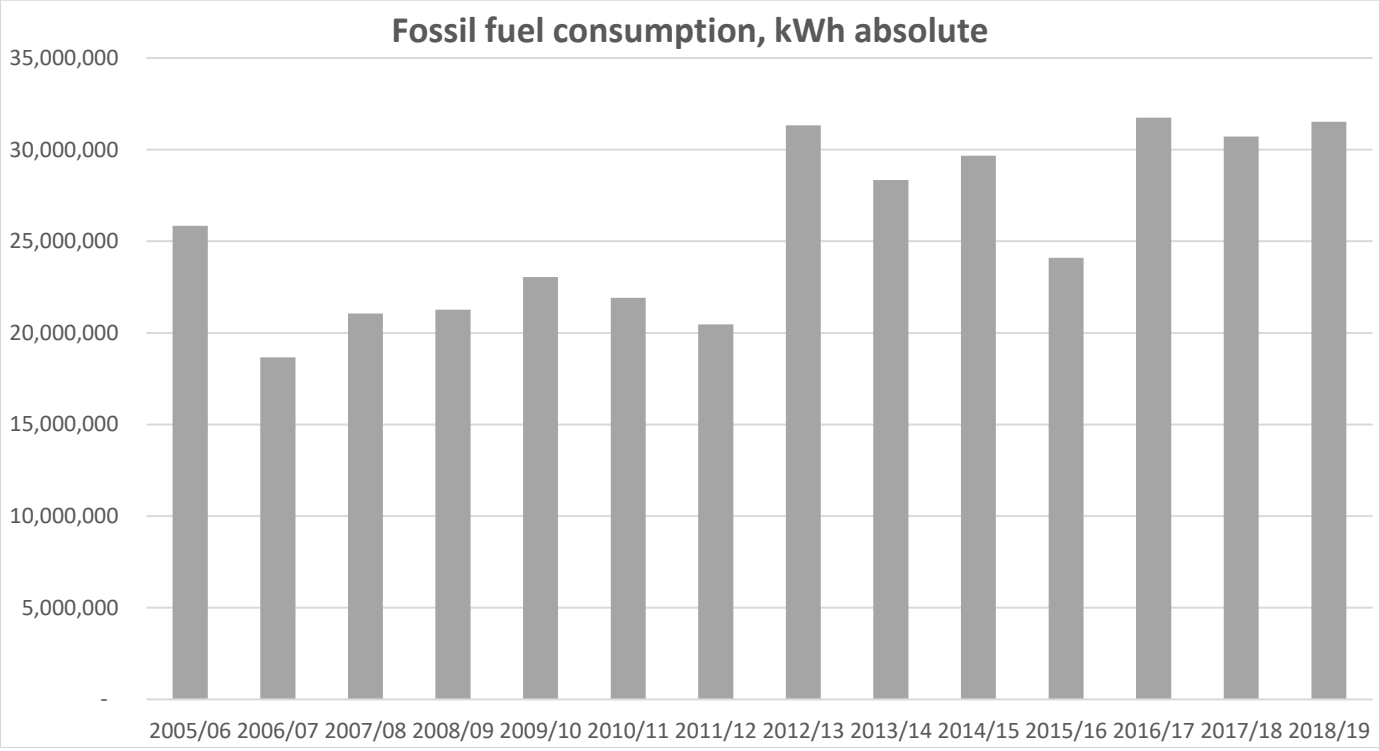
Electricity consumption per year



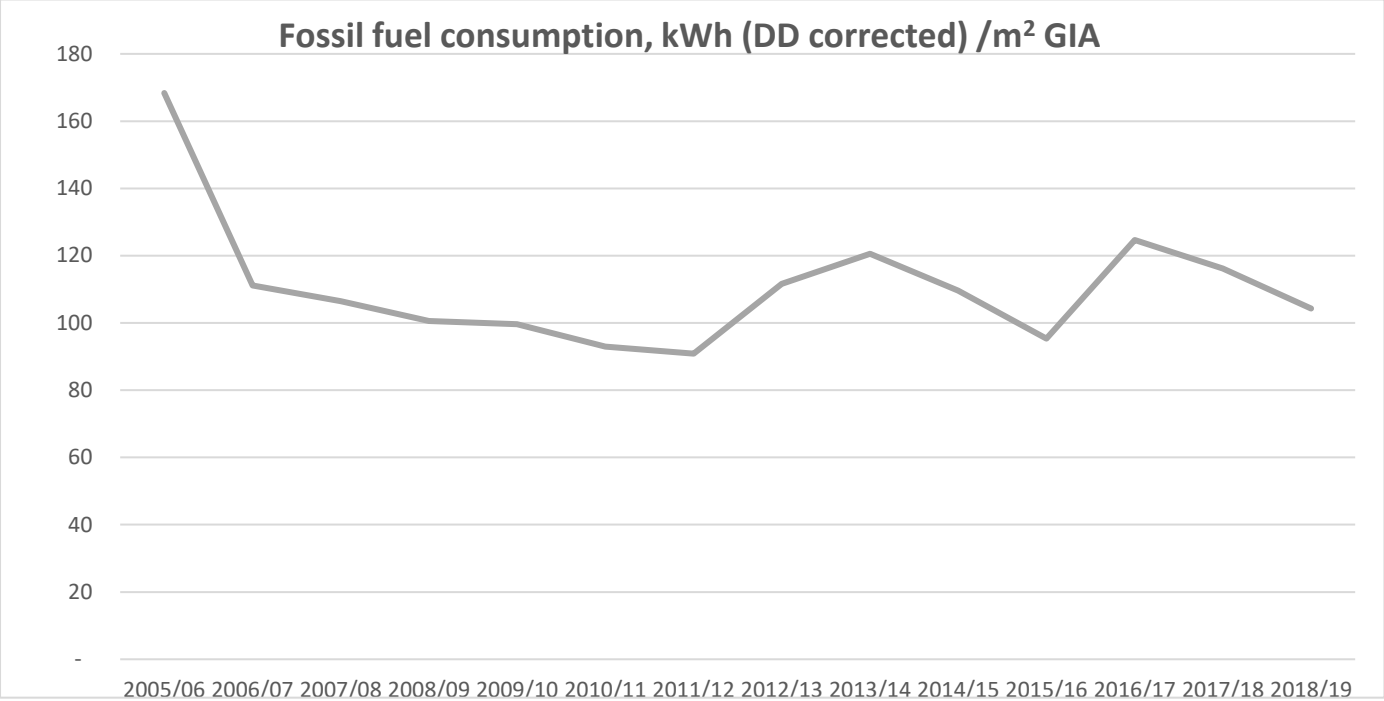
Electricity use per floor area (weather corrected), kWh/m²



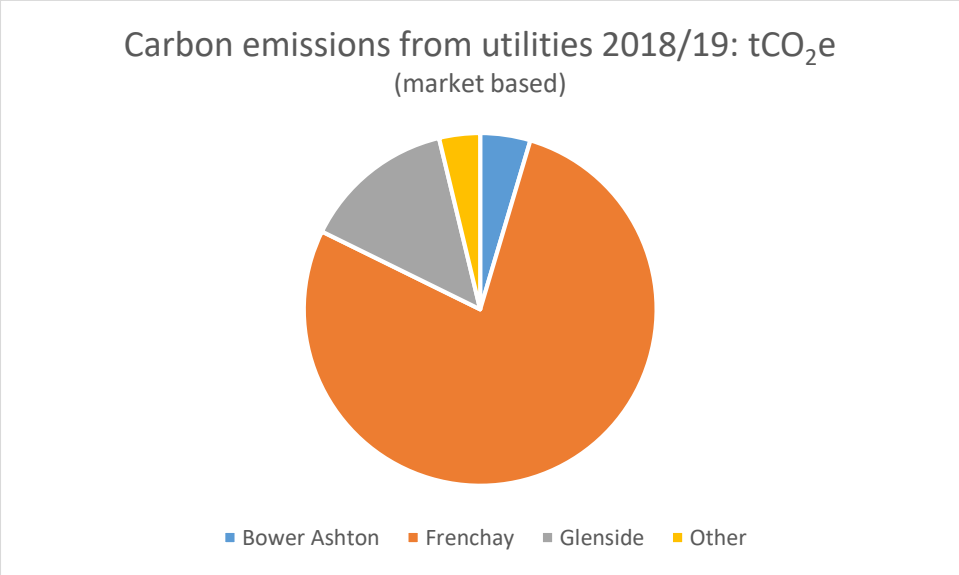
Fossil fuel consumption (gas & oil), kWh



Fossil fuel use per floor area (weather corrected), kWh/m²



Distribution of carbon emissions from utilities across sites



APPENDIX 2 – Carbon and Energy Management Plan impact on the seven sustainability commitments in Strategy 2030: Transforming Futures.

Tranforming Futures Sustainability Commitments	How the CEMP impacts on these
Be carbon neutral as an organisation, with net-zero emissions of greenhouse gases by 2030.	This is the key focus of the Carbon and Energy Management Plan.
Work through the ISO 14001 standard to set clear targets and plans to reduce water and energy use, cut waste generation including food waste, and support biodiversity.	The Energy Management system aligns with the ISO 14001 principles, practices and processes.
As signatories to the UK Plastics Pact, eliminate all but essential single-use plastic and meet the 2025 targets for recycling and reuse.	Reducing Scope 3 carbon emissions will require reduced plastic packaging and single use plastic use.
Establish all our campuses as clean air and smoke-free zone.	Eliminating or significantly reducing fossil fuel use on campus (e.g. use in boilers, fleet, etc) will have a direct impact on the campus clean air commitment.
Invest in and secure year-on-year improvement in travel sustainability for staff, students and visitors.	Reducing Scope 3 emissions relies heavily on reducing emissions from travel – within business and academic travel; student and staff commuting; and visitor travel.
Work with our students to explicitly address climate change and environmental challenges through our teaching, learning and curriculum.	Mandatory Carbon Literacy Training for all staff, and all students to support the development of capability, confidence and capability to understand and act on the carbon consequences of actions and decisions.

Support research that addresses issues relating to climate change, environmental challenges and biodiversity.	Promoting the use of the university as a living lab, ensuring energy data is available to academics and students. Encourage energy projects on site (behavioural and technical). Engage academics and students in operations and projects where possible. Ensure we tap into leading research available through academics for the operation of our estate.

APPENDIX 3 – Carbon reduction actions in other university Sustainability Plans

Sustainability plan	Carbon reduction action	Responsibility	Timeframe	Estimated carbon savings (tCO_2e) [if known]
Landscape and Biodiversity action plan	Protection and development of UWE Tree populations to allow for increased carbon sequestration year on year.	Grounds Team	Ongoing	
Landscape and Biodiversity action plan	Increase of number of plants grown on site in peat free medium.	Grounds Team	Ongoing	
Landscape and Biodiversity action plan	Electric Grounds Equipment and vehicle Model – phasing out of petrol-powered hand-held grounds maintenance equipment.	Grounds Team	Annual refresh in line with capital investment opportunities and technological improvements within the industry.	
Landscape and Biodiversity action plan	Reduction of single use plastic in grounds management practices	Grounds Team	Annual review of LABMP	
Landscape and Biodiversity action plan	Meadowscape project – Promotion of lower impact and lower resource sustainable land management practices.	Grounds Team	Annual Grass cutting induction and review.	
Circular Economy	Scope 3 procurement of goods / services Scope 3 waste disposal	Sustainability Team	2 year refresh	
Sustainable Food	Food for life Silver offer coverage %	Hospitality Team	2 year refresh	Unknown at present - We will make use of the TUCO greenhouse gas footprint calculator

Sustainability plan	Carbon reduction action	Responsibility	Timeframe	Estimated carbon savings (tCO_2e) [if known]
Sustainable Food	Embedded CO2e emissions within supplied foods	Hospitality Team	2 year refresh	Unknown at present - We will make use of the TUCO greenhouse gas footprint calculator
Sustainable Food	Quantity of single-use plastic we retail is (including bioplastic)	Hospitality Team	2 year refresh	Unknown at present - We will make use of the TUCO greenhouse gas footprint calculator
Sustainable Food	% of plant-based versus meat-based offer	Hospitality Team	2 year refresh	Unknown at present - We will make use of the TUCO greenhouse gas footprint calculator
Sustainable Food	Procurement of New Equipment – utilising the green fund green fund to help universities (and other public sector organisations) with reducing their carbon emissions	Hospitality Team + Energy Team, Estates.	2 year refresh	Unknown until purchased.
Sustainable Food	Marketing, Menu Planning and Development E.g how food trends will educate our customers in trying something new.	Hospitality Team	2 year refresh	Unknown at present - We will make use of the TUCO greenhouse gas footprint calculator
Travel	Zero Travel (Scope 3) Minimising the need to travel, via Agile working practices, timetabling efficiency and accommodation location / choice.	Travel, IT, HR, CETTS & Accommodation	2 years	

Sustainability plan	Carbon reduction action	Responsibility	Timeframe	Estimated carbon savings (tCO_2e) [if known]
Travel	Commute (Scope 3) Prioritisation and promotion of low carbon travel options, restrictions placed on carbon intensive modes. Development of alternatives modes such as MASS travel systems.	Travel Team	1 year	
Travel	Visitor Travel (Scope 3) Reducing carbon intensive visitor travel, increased use of agile technologies, promotion of alternative modes & removal of "free" parking for visitors. To include conference, apprentice, CPD partnership activity.	Travel Team	1 year	
Travel	International Travel (Scope 3) Restricting & Reducing international academic /business, field trip air travel via increased scrutiny (Micro business case to prove value / discount alternatives) Engagement with international students t minimise air travel & look at alternatives/ offset.	Travel, Procurement, HR & AIR	2 year	

Sustainability plan	Carbon reduction action	Responsibility	Timeframe	Estimated carbon savings (tCO_2e) [if known]
Travel	Supply Chains & Procurement (Scope 2 & 3) Review & Policy development of procurement related transportation including. - Own Fleet - Consolidation - Contractor Management - Delivery Activities	Travel, Procurement & Logistics	3 year	
Travel	Business Travel (Scope 3) Restricting & reducing academic/business, field trip travel via pre-approval (Micro business case to prove value / discount alternatives prior to approval/ purchase expense claim), provision of alternative travel modes & agile technologies for remote attendance. Focus areas - Intercampus travel - Off campus meetings - Conference attendance - Placements	Travel, Procurement, HR, IT & Faculty Placements	3 year	
Travel	Facilities & Infrastructure Development of campus infrastructure to support low carbon travel and multi modal travel options, development of sites to support climate adaptation & clean air ambitions	Travel & Facilities Exec	5 Year	

APPENDIX 4 – Scope 1 & 2 costed Action Plan for Year 1 & 2

The Action Plan with associated costs is included is outline below (for internal use only).

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