

Environment and Carbon Year End Report 2019/2020



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Environment and Carbon Year End Report 2019/2020 (October 2020)

Executive Summary

Key highlights include the launch of the Carbon Net Zero Programme Plan, launch of the Climate Action Plans across the Colleges and Professional Service teams, launch of the Environment and Climate Emergency Board and achieving Bronze in the first submission of the AUDE Sustainable Leadership Scorecard.

Performance has been tracked against the Carbon Net Zero Programme and delivery of the E&CE Policy targets and recommendations. Our achievements have been summarised by the following infographic which details the highlights of 2019/2020 in 4 key themes; 'Our Commitments', 'Our Values', 'Our Infrastructure & Environment' and 'Our DNA'. The key highlights from the year end performance review and carbon data summary for 2019/2020 have been summarised into a Year End Infographic, with the key development points summarised as follows;

Year End carbon data highlights include:

- increased data accuracy from 60% to 70%, and increase data coverage from 90% to 95%,
- limited change to the footprint from the baseline year (0.6% reduction), with energy and travel savings from COVID 19 lockdown offset by the increase in procurement spend,
- carbon footprint review by environmental themes shows;
 - 55% arising from procurement spend (a 25% increase from the 2018/2019 baseline due to improved analysis but also an increase in spend on construction and computing equipment),
 - 23% arising from energy (a 13% reduction from the 2018/2019 baseline largely due to lockdown and the limited occupancy of the University buildings) and
 - 15% arising from travel (a 33% reduction from the 2018/2019 baseline attributed to the lockdown and associated travel restrictions).
- Costed Delivery Plan identified to deliver Carbon Net Zero and the commitments made in the Environment and Climate Emergency Working Group Report (Nov 2019) and the Environment and Climate Emergency Policy (2020).

In summary significant progress in data collection and carbon target delivery planning has been seen during 2019/2020, and whilst data integrity is increasing, continued focus on data capture will be undertaken to support transparency of data reporting and action planning.

Our Commitments

Governance

Established **E&CE Board & Net Zero Task Force**

Launched 20 **Thematic Forums & Climate Action Plans**

E&CE Decision Box incorporated into board papers

E&CE Policy endorsed by Vice-Chancellor + Senior Leadership Commitments

Data & Reporting

Launched **Greenstone** for environmental data & carbon reporting

Bronze Award EAUC Sustainability Leadership Scorecard

Signed **SDG Accord** commitment to report the SDGs

Lab Efficiency Assessment Framework Trialling accreditation

Signed **Planetary Health Alliance** Commitment to global environmental change

Green Recovery

Recovery Initiatives Embedded into the planning and development of Campus Restart

City Partnership Agreement to align key goals and identify areas for closer collaboration

Our Values

Hospitality & Catering

431 Local Products reducing the mileage of the food offered on campus

Free Reusable Mugs For new students to discourage single-use cups

Tackling Single-Use Cup Waste → **Hot Bevy Levy** Reduced costs when opting for reusable cups

100% Plastic Cup Ban Single-use plastic cups no longer available on campus

Sustainable Restaurant Association 2 star award → **20% Meat Reduction** increasing plant based alternatives

Local Travel

19% bus increase when comparing term 1 2019 vs term 1 2020

71,000 bus journeys using the 1/3 off Exeter bus discount

£100k for Active Travel For improved cycling infrastructure

Business Travel

Travel Restart Group Supporting action towards 50% reduction in business travel

Working with leads to offer **Low Carbon Field Courses**

Joined the **Academic Roundtable for Sustainable Travel**

Our Infrastructure & Environment

Energy & Water

2nd in the Russell Group for **Renewable Energy Generation on Campus**

400kw Solar PV installed + **30 EV chargers** connected

> 3 million litres of water saved from Propelair low flush toilets

100% REGO Certified Renewable Electricity 20% via Power Purchase Agreement

ISO14001 Accredited CIOSS Only

Digital

Future Working Strategy under review to support home working

1186% use of MS Teams & Zoom → **53%** Aiming for 95% reduction 20/21 **Printing**

Biodiversity

> 5 Acres Grassland managed to increase campus biodiversity

400+ Trees Planted Across all campuses by the grounds team & students

Green Flag Awards across our Streatham, St Luke's and Penryn Campuses

Our DNA

Engagement

Go Green Week One week dedicated to sustainability events
200+ #MyEffect Pledges

Climate Companion Pack student engagement resource published. **2,500+ views**

65+ Students working with us via projects, placements & internships

Behaviour Change

Green Rewards behaviour change programme underway for all students & staff

500 Active Users

>12,000 +ve Actions

≈16t Carbon Saved

WARPit saved: £50k, 8,472kg waste, 18t carbon

Carbon Literacy Training programme in development for all staff and students

Communications

E&CE Campaign & website development

Monthly Forum Newsletters To keep contributors up to date with progress

Launched College Scorecards Updates on E&CE progress

Our overall Targets to Carbon Net Zero

30% by **2025**
60% by **2030**
Net Zero by **2050** (at the latest)

Our 19/20 Position

Overall Footprint **-0.6%** (-467t) **CO₂** from 2018/19 baseline

Scope 1 & 2

Energy **-13%** (-2,808t) = 23% of Overall Footprint

Scope 3

Travel **-33%** (-6,222t) = 15% of Overall Footprint

Waste **-40%** (-483t) = 1% of Overall Footprint

Procurement **+25%** (+8,936t) = 55% of Overall Footprint

Investments **+2%** (+69t) = 6% of Overall Footprint

Water **+14%** (+40t) = <1% of Overall Footprint

How Our Footprint Changed in 2019/20

1. Performance Review of Programme Plan 2019/2020

1.1 Progress of the Carbon Net Zero Programme Status – On Track

The Initiation and Development Phases of the Carbon Net Zero Programme (Phase 1 and 2) were launched in January 2020 and are now complete. Planning for the Delivery Phase (Phase 3) also commenced in 2019/2020 with the detailed review of initiatives and Climate Action Plan workshops with the College and Professional Service teams. Phase 3 is due to be complete in November 2020.

Table 1.1: Carbon Net Zero Programme phases

Phase	Output	Due Date	Status
1: Initiation	Identify baseline data and commence data collection	Sept 2020	
2: Development	1. Develop policy, strategy, structure and approach 2. Develop governance approach 3. Develop organogram / RACI 4. Recruit team members 5. Establish Carbon Net Zero Delivery Group	Sept 2020	
3: Delivery Planning	1. Carbon initiatives identified 2. Climate Action Plans delivered 3. Technical evaluation of carbon/ cost 4. Approval of costed Net Zero delivery plan	Nov 2020	In delivery
4: Delivery Rollout	1. Launch in-year carbon savings goals and tracking of initiatives 2. Fully resource the E&CE team	Jan 2021	/
5: Monitoring	In-year tracking of goals	Jan 2021	/

1.2 External Environmental and Sustainability Benchmarking

The University submitted its first submission to the AUDE Sustainability Leadership Scorecard (SLS) in 2019/2020. SLS is a self-assessment framework that is used to support the development of environmental sustainability via target setting, evaluation and reporting. SLS has a key focus on governance, stipulating that sustainable development is integrated into key policies, highlighting that it should form an integral focus of an institutions overarching strategy. The SLS framework covers the entire breadth of institution including ‘Leadership & Governance’, ‘Estates & Operations’, ‘Partnership & Engagement’ and ‘Learning, Teaching & Research’ and encourages target setting as part of the submission process. SLS also incorporates impact calculation of the Sustainable Development Goals (SDG) which enables the University to start tracking adoption of the 17 SDG principles. The University of Exeter has committed to driving progress in these principles and reporting on the University’s SDG impact.

Table 1.2: Benchmarking update

Task	Output	Due	Current Outcome	Score
AUDE SLS Scorecard	Self-assessment of our sustainability performance.	Feb-20	Monitoring: Submission will function as an improvement framework. Action planning underway.	45% Bronze
People & Planet League	Transparent web resources to achieve accurate score for the 2020 league.	Jun-21	Delivery Rollout: League cancelled for 2020. Requirements checklist & gap analysis will still be conducted.	Cancelled 2:1 2019
SDG Accord Annual Survey	Survey submission will be anonymised and included in SDG annual report.	Apr-20	Requirement of recent signing of the SDG Accord. Yearly mandatory task for HE signatories.	Submitted

2.0 Data Overview (2019/2020)

As a result of improved data management practices e.g. increased accuracy of data, adoption of Greenstone data management tool and review of the estimation methodology (specifically for the estimation of the procurement spend data) has led to a restatement of the 2018/2019 baseline. Table 2 shows the footprint information for 2018/2019 and year end position of 2019/2020.

Table 2.0 – Data table 2019/2020 against 2018/2019 baseline carbon footprint

Emissions Category	2018/19 Baseline Year	2019/20	% Difference	NOTES
	CARBON (t CO2)			
Energy				
Electricity	10071	8177	-19%	Includes scope 3 electricity (i.e. from upstream ¹ leased assets and on-campus downstream ² leased assets, but not home-working or tenant energy).
Gas	7877	7594	-4%	
Oil and other fuel	386	257	-33%	
Transmission and distribution losses, supply chain, supply chain losses	2920	2418	-17%	Based on UoE emissions only. Average data method used (automatically through Greenstone)
Total Energy	21254	18446	-13% ▼	1% Grid factor changes, 12% COVID19 lockdown & other savings
Travel				
Business travel and field trips				Does not include upstream transport and distribution
Air	8124	4718	-42%	Taken from actual data provided by Click and Key Travel, estimates from procurement cards and expenses
Land - Road	924	586	-37%	
Land - Rail	321	181	-44%	
Sea	8.19	6.18	-25%	
Field Trips	2100	1575	-25%	
Hotels and accommodation	1200	809	-33%	
Commuting	6231	4811	-23%	Estimates based on FTE (for UoE employed staff only)
Total Travel	18908	12686	-33% ▼	
Waste				
Campus Waste (inc. recycled)	1047	630	-40%	Captured data only, excludes feminine hygiene data and some construction / refurbishment project data
Construction Waste (inc. recycled)	166	100	-40%	2018/2019 data estimated based on 2019/2020 data
Total Waste	1213	730	-40% ▼	
Water				
Total Water	285	325	14% ▲	
Investments				
Investment	4585	4654	2%	Carbon based on Investment portfolio only. Information provided by Rathbones Investments only.
Total Investments	4585	4654	2% ▲	
Supply Chain / Procurement Spend				
Education & Training	299	383	28%	
Paper and/or Printing	386	522	35%	
Plastic Products	1510	1558	3%	
Food, Catering & Hospitality	2731	2335	-15%	
Admin & Services	2441	2871	18%	
Medical or Pharmaceuticals	2128	3206	51%	
Other Purchases	5502	7470	36%	Does not include end of life treatment of sold products
Equipment & Computing	6491	9759	50%	
Construction & Refurbishment	13440	15104	12%	
Travel and Transport	786	737	-6%	Includes vehicle repairs, servicing, transport administrative services, manufacturing etc.
Utilities	235	940	300%	Includes metering and service procurement spend where location data is described as general
Total Procurement spend carbon	35949	44885	25% ▲	Carbon assess from spend according to DEFRA guidelines
Total Year End Carbon	82194	81727	-0.6% ▼	
Data Accuracy	60%	70%	Actual data is a priority, however where it is not available estimations have been used which lowers the data accuracy. Procurement spend and part of waste is estimated, wfh energy is not included and there are gaps relating to availability / unverified data. Target of 90% data accuracy by 2022/2023 and Target for 100% data coverage by 2021/2022	
Data Coverage	90%	95%		
¹ Upstream is defined as assets (including buildings, spaces and vehicles) leased by the University from a third party ² Downstream is defined as assets (including buildings, spaces and vehicles) owned by the University and leased by third parties				

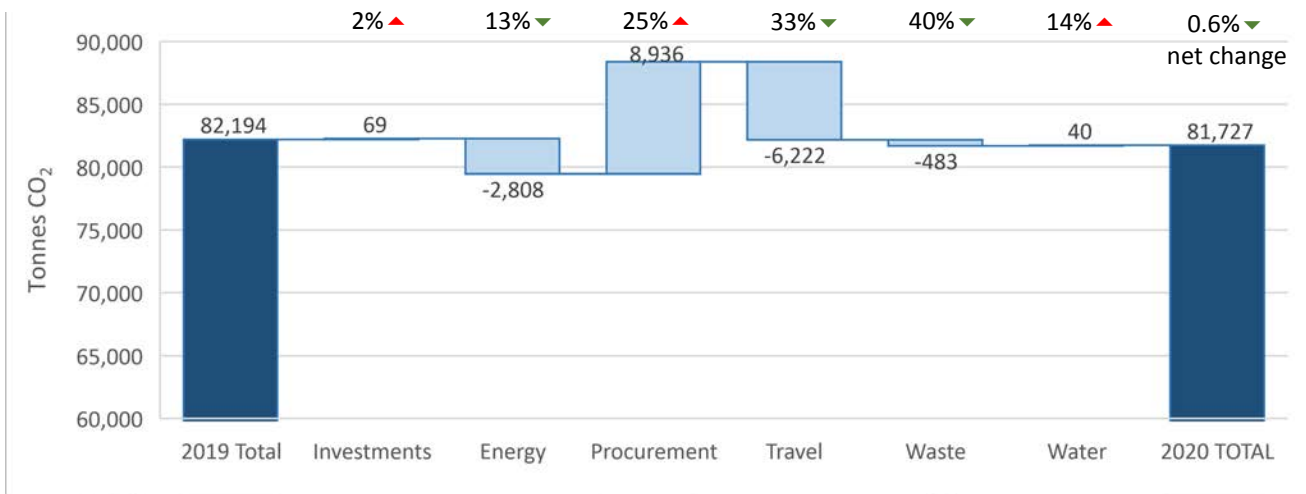
2.1 2019/ 2020 Data Commentary

Data coverage is now 95% and data accuracy is now at 70% and a target has been set for 90% by 2023 which will be driven by the Carbon Data Improvement Plan, to ensure data accuracy continues to improve. Data accuracy is based on the method of data capture with metered information providing 100% accuracy and involved / estimated data providing less accuracy (e.g. 80% accuracy). From 2021 year end data will be estimated to provide 100% coverage and further restatement of data footprints only required when there is material change (e.g. more than 5% difference) of the overall footprint.

2.2 2019/2020 Headline changes in the University Footprint

The overall change in the portfolio carbon footprint was a 9,513 tonnes CO₂ reduction from energy, travel and waste, and a 9,045 tonnes CO₂ increase from water, investments and procurement spend. The net position was an overall reduction of 468 tonnes CO₂ (0.6% reduction).

Chart 2.2 Waterfall of 2018/2019 baseline year to 2019/2020 year end, showing changes by environmental theme



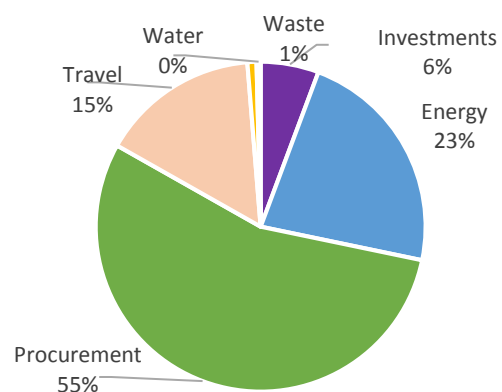
The carbon footprint in 2019/2020 was most significantly impacted by an increase of nearly 9,000 tonnes CO₂ from procurement spend which delivered a 25% increase in the procurement spend footprint. In addition other significant changes were a reduction of over 6,000 tonnes CO₂ (33% reduction) in travel and nearly 3,000 tonnes CO₂ reduction (13% reduction) in energy.

2.3 University Total Carbon breakdown 2019/2020 by environmental theme

The following chart shows breakdown of the carbon footprint for 2019/2020 by category. The largest contributor was procurement spend (55%). The procurement spend carbon calculation methodology adopts DEFRA guidance on emission factors and whilst representative remains the most inaccurate methodology. In recognition of this, the University established a requirement to include carbon calculation in Business Case approvals and review of carbon in decision making to improve data capture.

Chart 2.3: Carbon footprint consumption 2019/2020 data.

College / Dept.	Carbon emission tCO ₂	%
Energy	18,446	23%
Travel	12,686	15%
Procurement spend	44,885	55%
Waste	730	1%
Water	326	>1%
Investments	4,654	6%
Total	81,727	



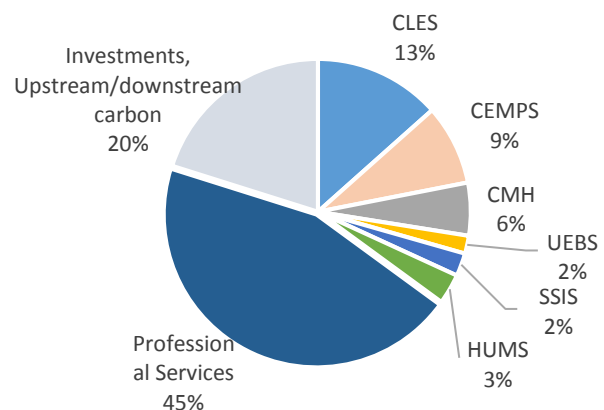
The second largest contributor was energy (23%) then travel (15%). With increased purchase of renewables for electricity and decarbonisation of the gas network this category can be significantly reduced. The third largest contributor to the footprint is travel. Minimising travel to 'essential travel' and supporting intercampus links, and more sustainable commuting options will significantly help reduce the travel footprint.

2.4 University Total Carbon breakdown 2019/2020 by department

The department with the potential for the largest influence on the University carbon footprint is Professional Services (45% of the footprint; showing an increase of 4% on the baseline year) followed by CLES (13%; down 3% on the baseline year), and CEMPS (9%; down 2% on the baseline year). These changes are attributed to the impact of COVID19 and the lockdown including the need to make the Campus COVID safe.

Chart 2.4 : Carbon footprint consumption 2019/2020 data.

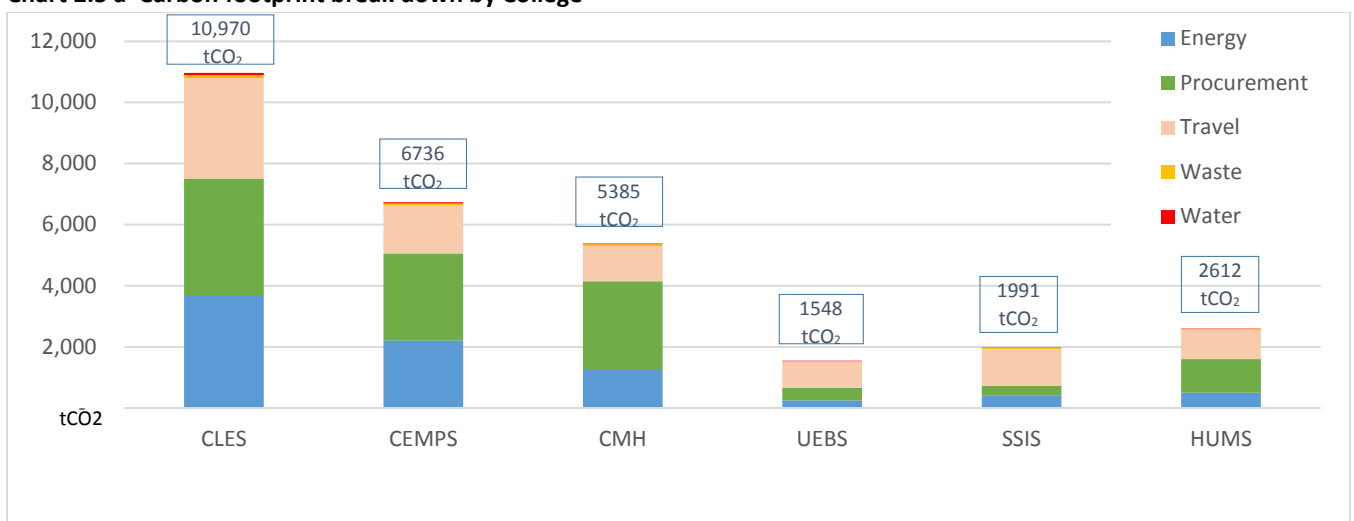
College / Dept.	Carbon emission (tCO ₂)	%
CLES	10,970	13%
CEMPS	6,949	9%
CMH	4,571	6%
UEBS	1,548	2%
SSIS	1,991	2%
HUMS	2,612	3%
Professional Services	36,624	45%
Investments, upstream/downstream energy, pan-university procurement spend	16,462	20%
Total	81,727	100%



2.5 Carbon summary of College / Professional Service (PS) team

The carbon footprint of each College is shown for each environmental theme in chart 2.5 (a) and Professional Service teams in chart 2.5 (b). The variation in each College footprint relates to the activities undertaken e.g. field trips local and / or international, laboratory work and equipment relevant to each lab as well as presence on campus during lockdown (where essential lab work and research continued).

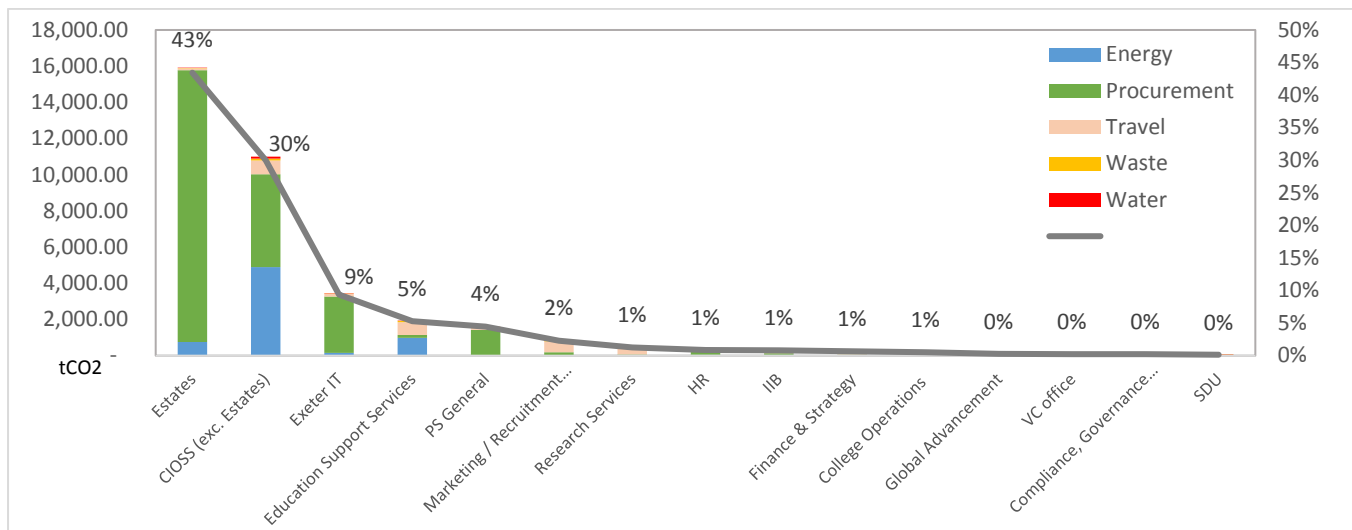
Chart 2.5 a Carbon footprint break down by College



In review of the Professional Services footprints, it can be seen that Estates and CIOSS held the largest footprints during 2019/2020. This can be attributed to the ongoing construction work at Streatham Campus

and the procurement spend related to making all Campus locations COVID safe. Exeter IT also showed a large procurement spend during 2019/2020 also related to provision of equipment and support to Colleges and students during lockdown, moving lectures on line as well as supporting the transition to home working.

Chart 2.5 b Carbon Footprint breakdown by Professional Service Team



2.6 Planned savings

During 2019/2020 a number of carbon reduction projects were planned and delivered, including:

Renewable Energy: The additional 400Kw of solar PV generated 120,000 kWh by year end (July 2020). The expected generation for full year is 37,000 kWh. The additional PV takes the University to 2nd in the Russell Group for renewable energy generation.

Renewable Power Purchase Agreements (PPA's): The UK's 1st collaborative Renewable PPA through the 'Energy Consortium Framework' was completed in July 2020, with the provision of 20% of the total University electricity demand. A second PPA agreement for the University sector commenced development (for delivery in 2020/2021) which is set to provide additional renewable energy of up to 80% coverage.

Water: The completion of the 'Horizon 2020' project in partnership with Propelair saw the installation of 121 Propelair WC's across 7 buildings, and a water reduction of 3,133,053 litres and a carbon saving of 3 tonnes.

Waste: As part of the Universities drive to reduce single use plastic, a 100% reduction in non-compostable single use plastic cups was launched and has achieved a saving of 11 tonnes of carbon.

2.7 Savings seen in COVID 19 Lockdown

The most significant change in the footprint this year has come from the COVID 19 lockdown which delivered savings as a result of closure of the Campus. Environmental savings were as follows:

Travel: The biggest reduction was seen in travel related emissions, with flights being banned and only limited numbers of staff commuting / travelling. There was a reduction in air transport emissions of 40% and commuting emissions reduced by 23% in the full year. This resulted in a reduction in overall travel related scope 3 emissions by 5,702 tonnes (33% reduction overall compared to 2018/2019 baseline year).

Energy: The full year energy consumption for 2019/2020 against 2018/2019 for electricity, gas and oil was a combined 8% reduction with the majority of the reduction taking place during April to July. This resulted in a carbon reduction of 13% (1850 tonnes CO₂). Another significant outcome was the move to online working and an 1186% increase in use of TEAMs – a step change in digital working and learning.

Waste/Printing: With the relocation of staff moving to work from home on a digital platform a significant reduction in waste and printing has been achieved. Printing volume has reduced by 53% and waste by 40%, resulting in a carbon emission reduction of 483 tonnes.

Green Recovery: In addition to the planned savings, carbon savings have also arisen from the development and adoption of a Green Recovery. The impact and reductions from these initiatives embedded pan University may not be seen until year end 2020/2021. Status of the Green Recovery Initiatives are summarised below. Further Green Recovery Initiatives will be identified during 2020/2021.

Table 2.7: Green Recovery Initiatives Summary Status

No.	Initiative	Description	Date	Commentary	Status
1	E&CE Integrated into Business Decisions	E&CE Decision Box incorporated into Board papers.	Oct-20	Proposal approved at VCEG and launched mid/late October	
2	50% Business travel Reduction	Reduction in carbon from non-essential business travel	Sep-20	Travel Restart Group established and tracking via the COVID 19 Safe / Insurance tracking booking system via Click and Key.	
3	Revised / Increased Homeworking Policy	Formal policy / structure & approach	Sep-20	Future Working strategy under review	
4	95% Reduction in non-essential printing	Initiatives in place, change of contract / operational approach	Sep-20	Limited progress, further discussion required with highest print users and print provided to vary contract.	
5	100% Ban on Single-Use Plastic Cups	Cups issued on return to campus	Sep-20	Cups issued to reduce the need for single use cups, full return anticipated from Jan 2021	

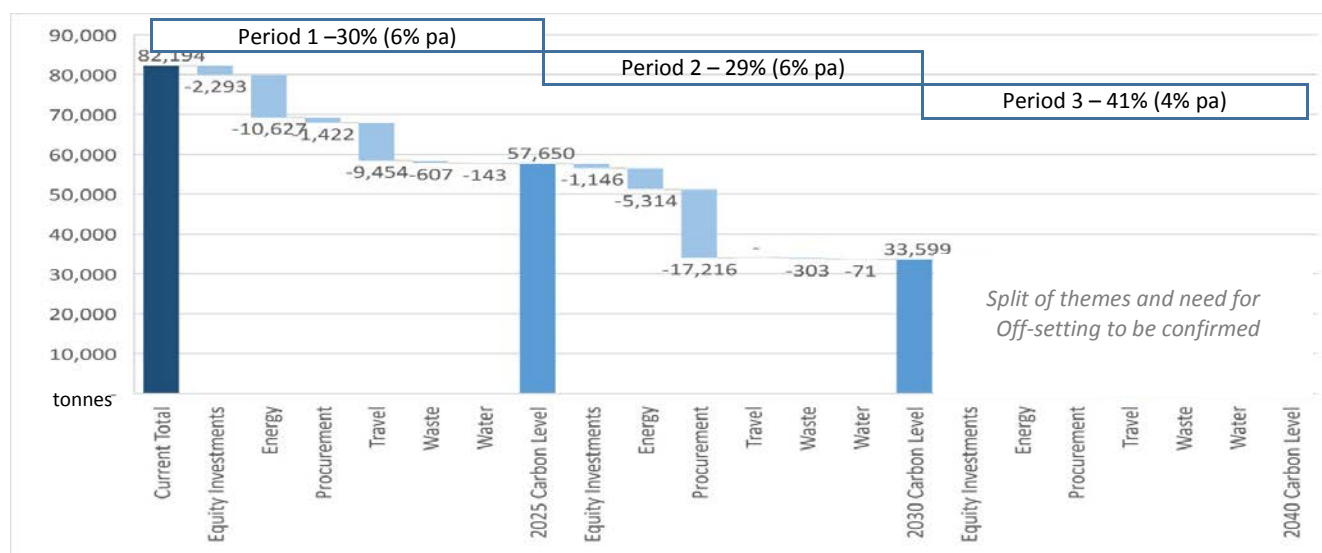
3.0 Targets Programme

The E&CE Policy targets outline stepped savings periods (2020-2025, 2025-2030 and 2030-2040) which when overlaid with the 2018/2019 baseline (restated according to the Year End Report 2019/2020) can provide savings goals for each period. A Carbon Net Zero delivery plan is under review and will commence 2020/2021. It is proposed that ‘in-year’ targets are adopted in each period to build momentum. Within the table below ‘in year’ goals are set out as a linear percentage reductions across each period e.g. 6% pa in period 1 and period 2, and 4% pa in period 3. These percentages are subject to further agreement as part of the E&CE Board review of the Carbon Net Zero delivery Plan and therefore subject to confirmation in 2021.

Table 3a: Carbon Net Zero Targets delivery plan set out in the E&CE Policy against the YE 2018/2019 baseline

Carbon Savings	Period 1: 2020 – 2025		Period 2: 2025 – 2030		Period 3: 2030 – 2040	
	E&CE Policy carbon target	Annual carbon reduction	E&CE Policy carbon target	Annual carbon reduction	E&CE Policy carbon target	Annual carbon reduction
tCO ₂	24,545	4,909pa	24,050	4810pa	33,600	3,360pa
% reduction	30%	6%pa	29%	6%pa	41%	4% pa

Chart: 3b Waterfall of Carbon Net Zero Targets Delivery Programme



The targets to net zero for scope 1 and 2 by 2040, and scope 3 by 2050 remain University commitments, and the 'in year' goals planned to deliver a 30% reduction by 2025, and circa 60% by 2030 assist the University establish and deliver a total carbon structured management programme. The University focus for period 1 and 2 is carbon reduction, low carbon alternatives and management of operations.

Offsetting will be subject to further review and consideration once all reduction opportunities have been evaluated and completed.

Environmental net gain continues alongside the carbon reduction programme which includes working with suppliers and partners to recognised new opportunities as well as protect, enhance and build on the existing diversity of species flora and fauna within our own campus locations.

4.0 Conclusion

Key highlights include the launch of the Carbon Net Zero Programme Plan, launch of the Climate Action Plans across the Colleges and Professional Service teams and delivery of operational carbon savings (from planned initiatives and as a result of the campus lockdown), the launch of the Environment and Climate Emergency Board and achieving Bronze in the first benchmarking to AUDE Sustainable Leadership Scorecard. The key highlights from the YE performance review and carbon data summary for 2019/2020 have been summarised into a YE Infographic, with the key development points summarised as follows;

Year End carbon data highlights include

- increased accuracy from 60% to 70%, and increase coverage from 90% to 95%,
- limited change to the footprint from the baseline year (0.6% reduction), with energy and travel savings from COVID 19 lockdown offset by the increase in procurement spend,
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- Costed Delivery Plan identified to deliver Carbon Net Zero and the commitments made in the Environment and Climate Emergency Working Group Report (Nov 2019) and the Environment and Climate Emergency Policy (2020).

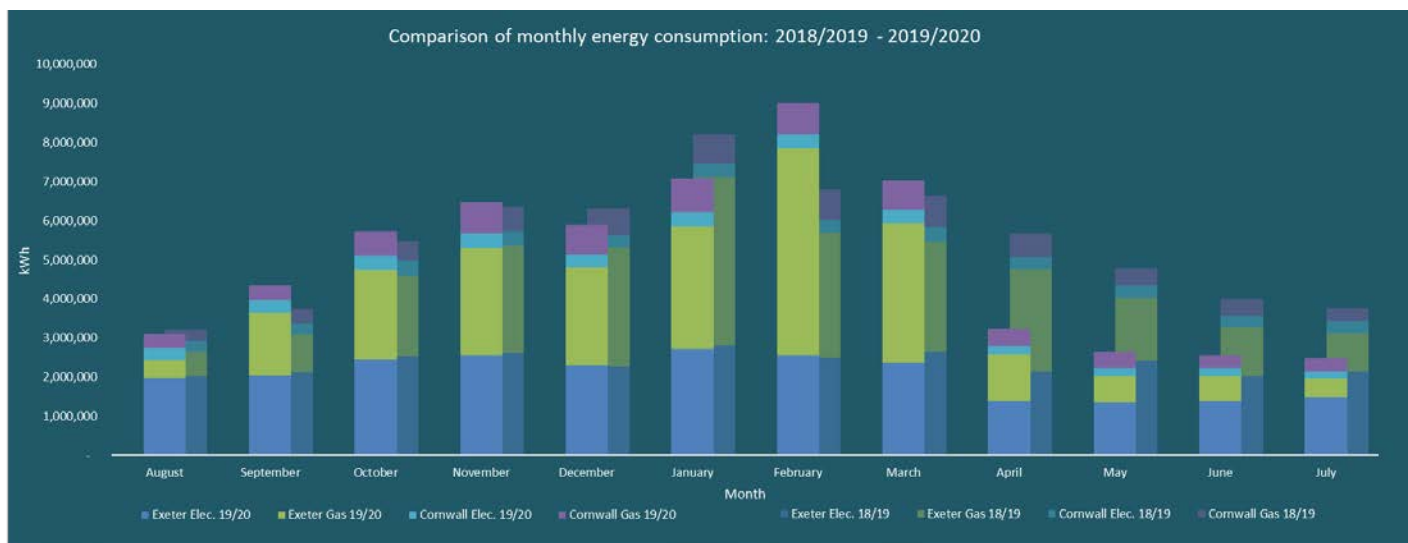
In summary significant progress in data collection and carbon target delivery planning has been seen during 2019/2020, and whilst data integrity is increasing, continued focus on data capture will be undertaken to support transparency of data reporting and action planning.

Appendix A – Highlights

1. Energy Overview / Consumption Profiles in 2019/2020

The total energy consumption during 2019/2020 was 59.6GWH vs 64.6GWH in 2018/2019 (12,858 tonnes CO₂e vs 14,839 tonnes CO₂e) representing a -9% change in energy and -14% change in carbon against the baseline year. This reduction was predominantly driven by the COVID 19 lockdown and the operational practices of remote working, but additional reductions in carbon related to grid factor emission reduction and different climatic conditions.

Chart 1: Combined energy consumption (all campuses) 2019/20 energy consumption vs 2018/19 energy consumption



In a typical year there is a variance month to month in consumption of electricity and gas depending on weather and season. When comparing total energy 2019/20 vs 2018/19, it can be seen that the majority of the reduction took place during March to July. The carbon variance shows more extreme ranges due to the heating demand and gas being more carbon intensive, but again a similar profile over the year.

1.2 Comparison to competitors

Using the 2018/19 HESA data submitted by each university, Exeter currently has the 2nd lowest in Russell Group universities for total energy consumption, and is 7th for percentage of energy purchased through green tariffs and 2nd for total renewable energy generated onsite or offsite

Table 1.2a: Total energy consumption across Russell Group

Rank	University	Total annual energy consumption (kWh)
1	LSE	37,244,400
2	Exeter	66,050,409
3	Queen Mary	67,938,033
4	York	89,043,801
5	Queen's Belfast	96,491,304
6	Durham	112,549,136
7	Cardiff	116,383,276
8	Southampton	120,585,461
9	Newcastle	124,112,915
10	Glasgow	129,285,173

Table 1.2b: % Energy from green tariffs across Russell Group

Rank	University	% Energy Purchased Through Green Tariffs (%)
1	LSE	100
2	Cardiff	100
3	Oxford	100
4	Bristol	99.5
5	Newcastle	70.6
6	King's College	61
7	Exeter	47.6
8	Sheffield	46.9
9	Edinburgh	36.7
10	Durham	35

Across the whole Higher Education sector, the University of Exeter has a higher than average total energy consumption but also a higher than average percentage of energy purchased through green tariffs and higher total renewable energy generated. These figures do not take into account the relative size of each university, which is not readily accessible.

Table 1.2c: Total energy consumption and % energy purchased through green tariffs for Higher Education sector vs Exeter University

	Total annual energy consumption (kWh)	% Energy Purchased Through Green Tariffs (%)	Total renewable energy generated onsite or offsite (kWh)
HE Sector Average	46,643,020	35.7	330,656
Exeter University	66,050,409	47.6	1,336,205

2. Procurement Overview (2019/2020)

2.1 2019/2020 Overview

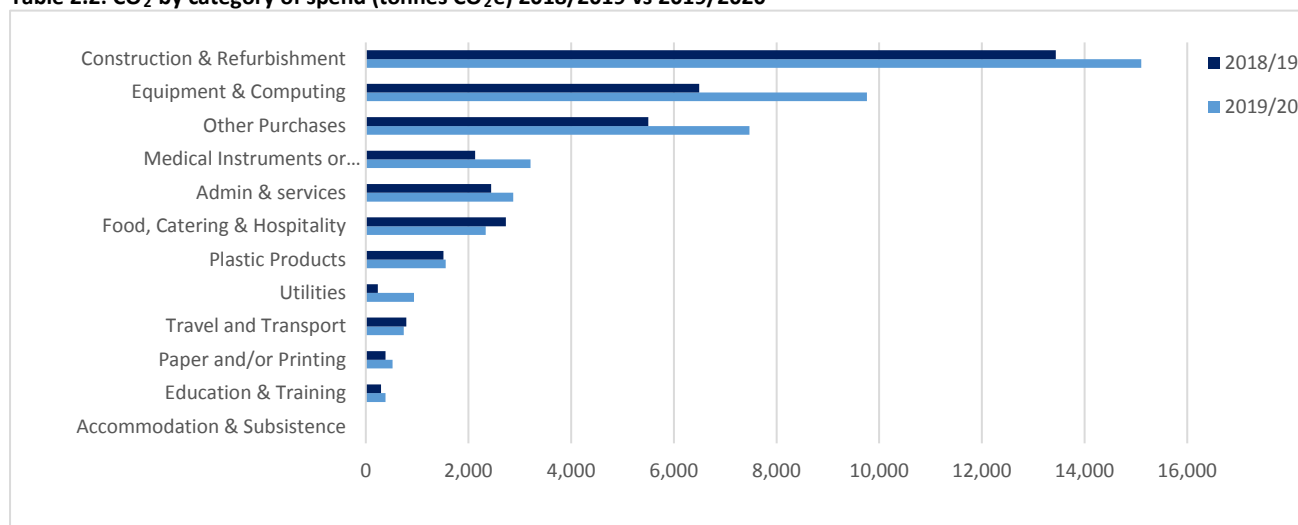
The methodology for calculating procurement spend carbon is currently based on spend. There are a number of bodies reviewing the methodology including AUDE, who are also looking at establishing a University methodology within the next 18 months to improve reporting credibility and data accuracy. The current methodology is widely disputed as it is based on spend¹ and an estimated factor for products purchased based on a DEFRA emission factor. Until the revised methodology becomes available this calculation will be adopted which will be consistent with the 2018/2019 baseline year calculation.

In 2018/2019, procurement spend accounted for 44% (35,959 tonnes CO₂e) of the University's 82,194 tonnes of CO₂ with 37% of this coming from construction. In 2019/2020 the procurement spend footprint increased by 25% (8,936 tonnes to 44,886 tonnes CO₂e). Construction materials remained the highest carbon footprint (34%) 22% from equipment and computing and 17% general and other purchases. Equipment and computing also saw the largest increase in 2019/20, rising primarily due to the impact of COVID 19 and University staff being required to work from home where possible.

2.2 Consumption Profiles in 2019/2020

In 2019/2020 the largest carbon footprint came from Construction Goods, Equipment and Computing and Utilities (which includes energy, gas and water). These categories also saw the largest increase in spend.

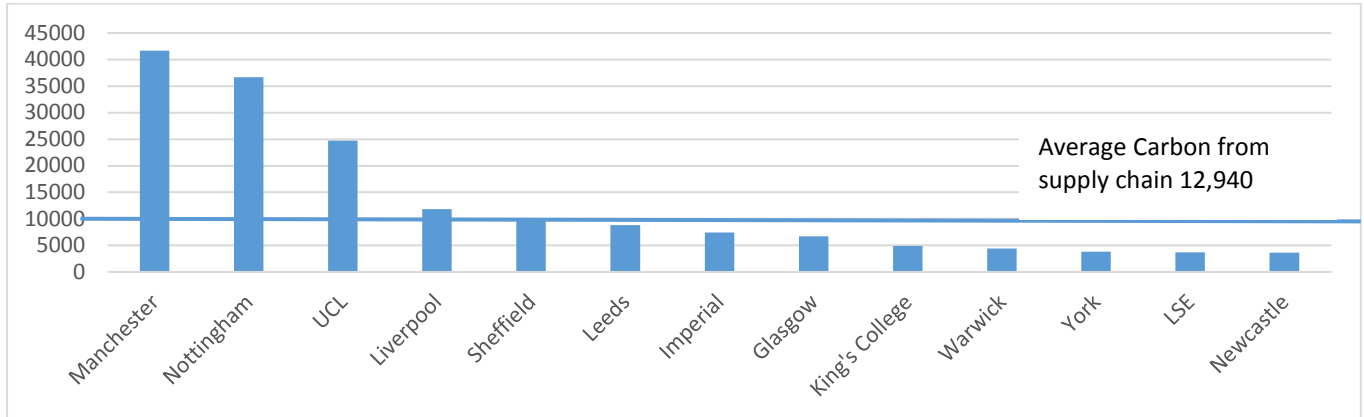
Table 2.2: CO₂ by category of spend (tonnes CO₂e) 2018/2019 vs 2019/2020



¹ carbon estimation based on spend is inaccurate as it does not account for individual carbon footprints of goods and services, but averages based on a product or service.

2.3 Comparison to competitors

In review of the HESA data and submission of supply chain data Manchester provides the highest carbon from supply chain followed by Nottingham and UCL. Whilst this data does not review what categories of procurement spend are included, it shows the level of reporting of their scope 3 supply. Exeter does not currently capture or track its supply chain carbon only spend data.



3. Travel Overview (2019/2020)

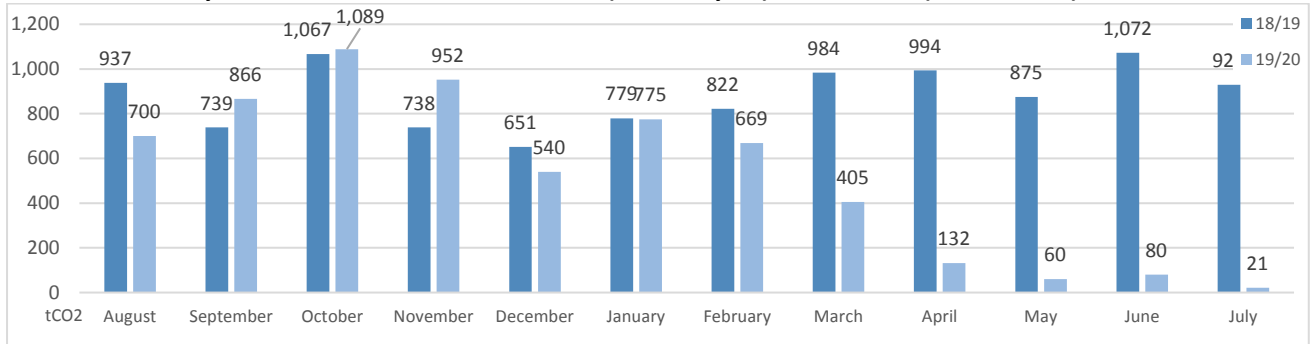
3.1 2019/2020 Overview

In 2018/2019, travel carbon emissions accounted for 23% (18,908 tonnes) of the University's 82,194 tonnes of CO₂ produced, whilst in 2019/20 travel accounted for 15.5% (12,868 tonnes) of the 81,727 tonnes. Exeter campuses account for most travel emissions in line with FTE split; with the exception of field trips, with an estimated 75% from Cornwall.

3.2 Business Travel

As part of the Green Recovery the University has committed to a 50% reduction in travel carbon from business travel and field trips. Processes are now in place that require business and field trip travel to be booked by Click and Key Travel to support management of insurance, travel safety and repatriation (should it be needed). This also offers a unique opportunity to capture carbon data, travel journeys and reason for travel. A review is also underway to identify the policy and travel justification criteria to support the 50% reduction target.

Chart 3.2: Monthly business travel emissions 2018/19 (baseline year) and 2019/20 (tonnes CO₂e)



3.3 Field Trips

The 2018/19 baseline field trip audit conducted as part of the White Paper process captured data on the majority of overseas and residential field trips. This audit estimated our 2018/19 carbon emissions from field trips as 2,100 tonnes CO₂e. A list of 2019/20 field trips identified that <50% of planned field trips took place; but a high proportion of long haul trips did take place early in the year before COVID 19 travel restrictions. Overall the audit identified a 25% reduction in carbon emissions from field trips in 19/20. This totals 1,575 tonnes CO₂e – a reduction of 525 tonnes CO₂e from 18/19 baseline.

3.4 Comparison to competitors

The most reliable metrics for comparison are within local travel as provided by annual HESA data. In line with the E&CE Policy the aim is to achieve a shift to low carbon travel. Chart 3.4a shows staff single car occupancy estimated at 38% for the Exeter campuses and 48% in Cornwall; whilst leading Russell Group institutions (outside London) such as Newcastle (14.3%), Edinburgh (16.0%), Bristol (18.8%) and Cardiff (20.4%) are significantly ahead (HESA 2018/19).

Modal shift requires support and incentives so it also useful to compare infrastructure metrics, such as cycle infrastructure provision. Exeter’s average space provision for cycle parking ranges from 1 space per 10.0-20.4 FTE and is significantly behind leading Russell Group universities.

Chart 3.4a: Staff single car occupancy journeys % modal share

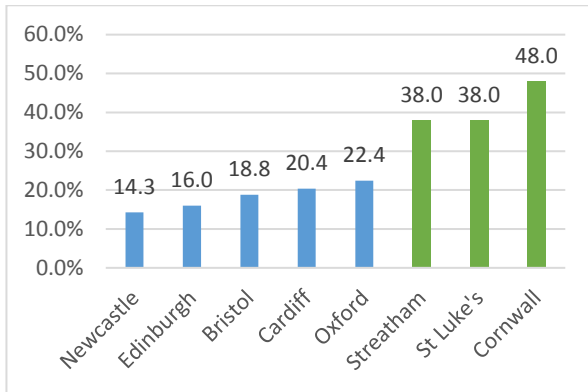
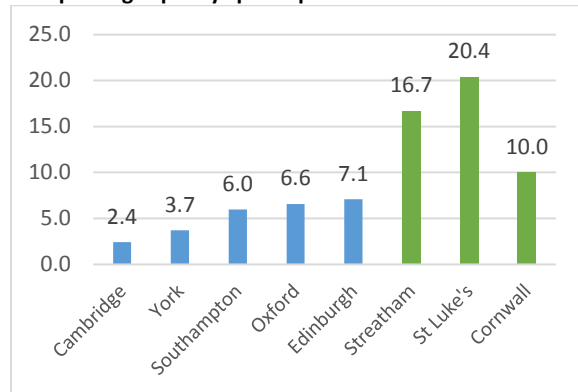


Chart 3.4b: Cycle infrastructure provision: Total existing bike parking capacity spaces per FTE staff + students.



A comparison of 2018/19 scope 3 business travel emissions amongst Russell Group universities (see table 3.4) highlights the challenge faced by Exeter and others (HESA 2018/19). This data has reliability issues – due to voluntary reporting requirements and methodology variations – but provides a useful comparison and positions Exeter in the mid-range for total business travel emissions performance.

Table 3.4: Scope 3 Business travel emissions by category (tonnes CO₂e)

	Air	Rail	Grey fleet (mileage claim)	Company cars (fleet vehicles)	Taxi	Coach	Total (t CO ₂)
UCL	33,560	647	369	0	385	0	34,961
Oxford	30,000	0	522	0	0	0	30,522
Edinburgh	17,632	322	128	0	162	12	18,256
Cambridge	15,515	138	300	0	167	6	16,125
Manchester	14,143	335	397		50		14,924
Glasgow	13,100	107	110				13,317
Leeds	12,451	290	211		61		13,013
Exeter	10,189	356	492	142	32	225	11,436
Queen Mary	9,351	9	6	0	1	1	9,367
Bristol	8,748	235	200	0	54	0	9,236

4. Engagement Overview (2019/2020)

4.1 2019/2020 Overview

Staff, students and other stakeholders play a crucial role in delivering an E&CE agenda and all strands of our engagement add value to this. Our involvement with student projects provide pedagogic value; enhancing learning experiences and driving innovation. Providing student campus partnerships, internships and placements support further learning and career development, whilst also progressing the agenda in key areas of interest for the University and students. Our behaviour change projects, such as the Green Rewards campaign, enables individuals to take ownership and drives individual, team and university-wide action.

To achieve the University's E&CE response ambitions and to reduce the environmental impact of our operations everyone needs to play their part as individuals, teams and Colleges, through action in our offices, labs, buildings, working practices, and through learning opportunities.

4.2 2019/20 Highlights

- **Green Rewards:** This engagement platform brings together individual, team and University-wide actions with data visibility, educational tools, communications, reward and recognition. Over 260 colleagues took part in the summer 2020 staff trial, completing 7,000+ positive actions (avoiding approximately 10 tonnes CO₂ which is the equivalent to >35,000 miles driven in an average sized petrol car² or boiling a kettle >650,000 times. Following the trial Green Rewards has been launched to staff and students and in its first month has over 460 active users.
- **Climate Companion Pack:** Creation of a digital Climate Companion Pack for students, developed in consultation with Societies and Education Incubator. Within 1 month of launch at the start of 2020/21 term 1 the Climate Pack page received 2,000+ views.
- **Student Projects:** We supported a range of
 - **Green Consultants:** Oversaw all 23 Green Consultants students' on-campus projects
 - **CEMPS Research Projects:** Collaborating on 2 research-funded Engineering projects with the Engineering Department; as well as 5 group projects for Renewable Energy students at Penryn as part of the Field Trip replacement programme
- **Student Internships:** Supported over 10 students on internships through a range of programmes (Education Incubator/Q-Step/Professional Pathways / GSI Masters)
- **Events delivered on campus:**
 - **Go Green Week:** Delivered a week-long programme of events on the Exeter campuses; partnering with student societies and external organisations
 - **New partnership events:** Introduced new monthly evening events delivered in partnership with the Be the Change Society (term 1 only due to Covid-19)
- **Student SCP staff:** We recruited and supported 6 current students to support event and engagement projects throughout the year; and who also supported the delivery of a new Student Sustainability monthly newsletter collating relevant news, events and updates

² Tonnes CO₂ calculated using <https://calculator.carbonfootprint.com/calculator>

4.3 Outline of some of the environmental engagement and student projects

College	Department	Programme	Reason for Engagement	Objective/Overview
CEMPS	Renewable Energy	Climate Emergency Response Project (ENE3001)	Replace for Field Trips	Heat demand modelling – Using available data on heat demand and building efficiency, modelling of alternatives to the CHP and absorption chillers in the ESI. Evaluation of the options to integrate the heating / cooling demands.
				PV project(s) for campus buildings – In preparation for the next phase of the PV programme rollout, the students will size and design proposals for campus building arrays, review of energy and carbon savings.
				Novel bus shelter PV array –a curved array on top of a new covered walkway alongside the bus stops at the Penryn Campus providing a visible demonstration of renewables to promote energy awareness.
				Community energy scheme –assessing the feasibility of community energy projects linked to Penryn Campus.
				E-bikes and batteries – review of battery technology (life and circular economy) and the options for an e-bike scheme on campus, link with the ReCell project work on recycling lithium batteries.
Engineering		Research Funded Project	A Joint European funded project reviewing district levels energy management problems are multilevel energy generation systems including thermal, electrical energy resources from national grid and onsite renewable resources.	
Engineering - Water Systems		Research Funded Project	A Horizon 2020 funded project to install 120 Low Flush Propelair WC across the Streatham Campus and assess the water saving, Health Issues, and impact on sewage network.	
ExeMPLaR	Plastics Research Hub	ExeMPLaR	Partnership	Working with BinIt & Exeter City Council to analyse waste management practice on campus (Streatham) and identify how to design improvements.
Business School	Management	The Exeter MBA	Pitch for projects	
SSIS	Q-Step Centre	Q-Step Data Analytics placements	Pitch for projects	Funded internships for students working on a range of practical data analytics projects including: business and commuter travel; energy consumption and waste management.
College of Humanities	Liberal Arts	Think Tank (LIB2000)	Student request for data	Projects researching the best interventions to reduce the University's carbon footprint in line with the goals of E&CE Working Group report
Education & Student Support	Teaching Quality Assurance /Enhancement	Grand Challenges (Challenge Online)	Projects with E&CE white paper	Reviewing the best solutions for reducing the impact of the food options available on campus
		Green Consultants		
	Student Employability	Professional Pathways		Professional Pathways to Marketing
		SCP Student Staff	Event support	6 students recruited and line managed to support our events and engagement work
CIOSS	Residences	Student Switch Off		Reviewing Energy-saving behaviour campaign in halls of residences