2019-2020 Sustainability Sub-Strategy Update

September 2020

Introduction

1. The Sustainability Sub-Strategy is a sub-strategy of the University Strategy, and thus is designed to support our core values and aims. Staff and students striving for excellence in research and education require and deserve a sustainable institution that provides comfortable and inspiring places to work and live.

2. The Sustainability Sub-Strategy received approval from Council on 28 November 2016. This paper covers progress since then, focusing specifically on the 2019-2020 academic year, and future sustainability plans for the University.

Overview

3. Reducing carbon emissions has been a key focus over this strategy period. A target was established to reduce total carbon emissions by 2020 (in the form of carbon dioxide equivalent) by 43% from a 2005 emissions baseline. Although significant progress has been made in reducing emissions, despite considerable growth in the University's size and student numbers, this has proved insufficient in meeting the target as yet.

4. While the targeted reduction has proven challenging to reach, our emissions have fallen by 27.7% (4,770 tonnes) compared with 2005 levels overall, while emissions per head and per m^2 have continued to fall (see table 1).

5. The UK government's Climate Change Act (2008) mandates the UK to reduce its national carbon emissions by 80% by 2050. An amendment to the Act was announced on 12 June 2019[1] with a more ambitious target of net zero emissions by 2050. Our estimations for reaching this target are set out in the Beyond 2019 section below (paragraphs 59-63). Significant investment will be required in order to achieve this objective.

6. There are two aims of the Sustainability Sub-Strategy (SSS):

   6.1 To identify policies and actions that will reduce the impact of the University on the natural environment whilst at the same time reducing its cost-base;

   6.2 To identify policies and actions that will improve the living, learning and working environments for all the University's students and staff.

7. The SSS identified nine objectives as set out below. Progress against each of these is described in the following sections of this paper:

   7.1 To optimise energy management to reduce net carbon emissions;

   7.2 To reduce waste production and maximise waste recycled;

   7.3 To support sustainable forms of transport;

   7.4 To maximise the quality of the grounds, biodiversity and landscapes within the University estate;

   7.5 To use information technology sustainably.

   7.6 To embed sustainability into procurement processes;

   7.7 To reduce water use;

   7.8 To maximise the amount of food offered at catering outlets derived from sustainable and local sources;

[1] https://www.bbc.co.uk/news/science-environment-48596775

7.9 To maximise engagement of staff and students in sustainability issues through the Green Impact and Student Switch Off projects.

COVID-19 Impacts

8. Like every other area of the University, sustainability is not immune to the impacts of the coronavirus pandemic, and it is vital to acknowledge them. Lockdown has afforded us insights, both positive and negative, for the ways in which altering our behaviours has an impact on the environment. This update takes these into account and will be detailed accordingly under each of the objectives. Broadly, we have benefitted from lower energy and resource use with fewer students and staff on campus, and the lockdown of entire buildings. However, the financial impact of the pandemic has resulted in a budget cut for sustainability-related projects.

Objective 1: To optimise energy management to reduce net carbon emissions

9. Between the UK financial years 2016 to 2019 (the time period for the Sustainability Sub-Strategy), University CO_2 emissions reported to the Government's Carbon Reduction Commitment fell by 2,100 tonnes from 15,571 tCO_2 to 13,417 tCO_2.[2] This scheme closed after the 2018-19 compliance year, and we currently monitor emissions ourselves based on billed energy usage. In late 2019 a Sustainability Coordinator was recruited into the Sustainability team who monitors utility billing, which allows usage to be tracked more closely than has ever been done before. Emissions for financial year 2019-20 are just over 3,100 tonnes below 2016 levels (15,571 tCO_2 to 12,440 tCO_2 over four years). The overall impact of the COVID-19 lockdown on carbon emissions was low, as equipment remained operational; for example water heating for those still on campus, ventilation systems, essential IT maintenance etc.

10. As noted in paragraph 3, progress has been made on carbon reduction across the campuses in support of the University Sustainability Sub-Strategy and the targeted reduction in total carbon emissions by 43% by 2020 (from 2005 emissions baseline). Last year's update reported a reduction of 33%, however this level of reduction has had to be recalculated due to a technical fault. This error has now been resolved and back-dated and puts us at a 27.7% reduction to date (compared with the 2005 baseline).

11. A project was scoped in 2019 for additional PV panels to be installed in nine locations at Colchester (both academic and accommodation buildings). At an estimated total cost of £830,000, it was predicted to deliver a £91,000 saving per year in energy costs and reduce our CO_2 emissions by 276 tonnes annually. The project was paused due to contractor appointment challenges, and as a result of the financial impact from the pandemic, it has been necessary to put this work on hold. The option to carry out a revised project, using circa £292,000 RGF (Revolving Green Fund) is being explored. The scaled back version would deliver an annual carbon saving of 104 tonnes; generate 270,000 kWh of electricity each year, creating a saving in electricity costs of £41,300. By reducing the scale of the project, however, the benefit to both carbon reduction and utility bills will be reduced.

12. Many of the projects included in the previous update are still applicable, with works continuing. For context, activity that has contributed to our reduction in emissions to date includes:

    12.1.1 Sustainability Engagement: working with staff and students emphasising the importance of energy conservation and providing stakeholders with the skills and knowledge to reduce their demand for energy. Further detail on this is included under Objective 9.

    12.1.2 Building Management Systems: infrastructure has been installed that allows improved building management, allowing greater control of heating and lighting, ensuring that energy is not wasted.

[2] The University derives its CO_2 emissions calculations from Defra carbon intensity metrics relating to kWh of gas and electricity.

12.1.3 Equipment upgrades that improve efficiency that are part of business as usual for the Maintenance and Capital Development teams. These include upgrades to energy-efficient boilers, thermostatic radiator valves and upgrading lighting to LED which typically use 75%-90% less energy than previously. LED lighting is now installed as standard in new buildings.

12.1.4 Increased supply of renewable electricity into the national grid has improved our carbon reduction performance, which will continue into the future.

12.1.5 The University continues with its programme of installing solar PV panels on roofs, which is standard on all new buildings; the new Causeway Teaching Centre will benefit from PV panels.

12.1.6 Solar PV panels are already installed at the Knowledge Gateway at Parkside 1 and 2 and Innovation Centre and on main campus at the Essex Business School, Network Centre, Albert Sloman Library, Kimmy Eldridge Building, multi-deck car park, STEM building and the Essex Sport Arena, as well as at the Corbett Theatre (Loughton).

13. From 1 October 2019, the University procured a 3-year (36 month) electricity contract that supplies 100% certified renewable energy, produced using wood pellets. This contract saves £32,199 per year compared with the previous contract.

14. A new gas contract was also procured, again for three years, which provides a saving of £121,831 per year compared with the previous contract.

15. Combined, these new contracts represent annual savings of £154,030, and over the 3-year contract period a total £462,090 saving. Prices were fixed at a point when the market was favourable and afforded us good value for money for the longer term.

16. Members of the Procurement and Sustainability teams travelled to the Drax power station in Yorkshire in late 2019 to see first-hand the site where the electricity is generated, and how the process works. The insights gained developed much better understanding and will aid future decisions on contracts. The existing process uses wood pellets (biomass) from certified sustainable sources, using up surplus material from the timber industry. Using the same equipment and process as coal-fired power, the wood pellets are burned in furnaces to heat water and the steam generated drives the turbines that create energy. The site at Drax produces around 6% of the UK's energy, and 11% of the UK's renewable energy.

17. The University has made efficiency gains in relation to carbon emissions overall and therefore per student and per unit of gross internal area (Table 1). While the student population has grown, emissions have fallen both in real terms, but also comparatively as we make more efficient use of our buildings. The University has seen a 138% rise in student population since 2005-06, and a 57% increase in its building footprint, yet emissions per head have fallen 69%, and per m^2 by 54% (based on 2019-20 financial year data).

Measure	2005-06	2012-13	2013-14	2014-15	2015-16	2016-17	2016-17 (AY)	2017-18	2017-18 (AY)	2018-19	2018-19 (AY)	2019-20	2019-20 (AY)
Carbon emissions (t CO_2e per year)	17,210	18,851	17,305	16,578	15,571	14,556	14,396[3]	14,235	13,826	13,417	12,928	12,440	12,370*[4]
Gross internal area (m^2)	181,186	224,134	228,500	236,605	238,805	240,000	240,000	252,176	252,176	252,176	252,176	284,706	284,706
Student headcount	7,311	13,783	13,471	14,135	14,205	15,228	15,228	15,528	15,528	16,017	16,107	17,385	17,385
Carbon emissions per unit area (t CO_2e per m^2)	0.095	0.084	0.075	0.070	0.065	0.061	0.060	0.056	0.055	0.053	0.051	0.044	0.043
Carbon emission per student (t CO_2e per FTE)	2.35	1.37	1.28	1.17	1.10	0.96	0.95	0.92	0.89	0.84	0.80	0.72	0.71

Table 1. Measures of carbon efficiencies per unit built area and per student, 2005-2020[5]

[3] Estimated based on an average of the total emissions for the time period covered, across two financial years.

[4] Estimated for full academic year as August and September data not yet available. Average of previous 3 months applied for those two months to calculate total. Figures based on billing data and may be adjusted later.

[5] CRC reporting year given until 2018-19 for CO_2 tonnage, which corresponds with financial year; for 2019-20 data based on metered energy usage figures. Figures for the University academic year are provided for context.

Objective 2: To reduce waste production and maximise waste recycled

18. Prior to the pandemic, the University was producing an average of 61.3 tonnes of waste per month in the first 6 months of the 2019-20 academic year (in 2018-19 it was 65 tonnes). An average of 22.5 tonnes of waste was separated for recycling on campus; the average monthly recycling segregation rate was 39.7% (in 2018-19 it was 26 tonnes and 30% respectively). In 2019 we peaked at a 44% recycling rate in May and October, which are typically peak months for waste generation, as students move out of and into accommodation. This overall improvement in recycling is encouraging, however it may be challenging to maintain it now that single-use items are used more commonly to reduce the risk of spreading COVID-19. Monitoring this through waste data reports, and focusing on reusable alternatives when possible, will be a key area of engagement for the Sustainability team in the 2020-21 academic year.

19. With only a small proportion of people on campus compared with 'normal' operation, waste generation has declined sharply during lockdown. Between April and July, only 57.5 tonnes of waste was produced in total. An average of 26% of this was recycling separated by users, although we do not yet have a clear idea of the types of waste currently being produced; i.e. whether there is less recyclable material overall. In addition, litter collected around Wivenhoe Park has vastly reduced with fewer people on campus, allowing the Grounds team to focus on their core areas of work, while managing a reduction in team numbers due to the pandemic (some staff were furloughed as part of the Government Coronavirus Job Retention Scheme).

20. Total waste production continues to decline, falling in recent years from 1,757 tonnes in 2009-10 to 1,215 tonnes in 2014-15, 1,176 tonnes in 2016-17, 1,074 tonnes in 2017-18, and 780 tonnes in 2018-19; an overall decline of 55% over 10 years. Construction waste (generated through contractor work) for 2018-19 is estimated at just over 4,500 tonnes, including material sent to landfill, recycling and other processing. When assessing the entire waste management chain from rubbish in bins, through to our contractors processing the University's waste and recycling, less than 1% of waste ends up in landfill. UK Government statistics for 2016 show that landfill still accounted for 24% of waste treated, and we therefore sit well below this.

21. The University, the Students' Union and British Heart Foundation (BHF) continue to work together on an annual *Pack for Good* programme that seeks to reduce waste when students vacate their accommodation in the summer. Students living in residences donate goods to BHF at the end of Summer Term (although donations can be made at any time at the collection bins on campus). Over the graduation period of 2018-19 1,738 bags of donations were collected worth an estimated £24,332 and the equivalent of 13.9 tonnes being diverted from the waste stream. While still a substantial amount, this was in fact equivalent to a 45% fall in donations compared with the previous year. This was attributed to some operational issues for the BHF, resulting in less promotion of the campaign to raise awareness. A donation of 10 bags pays a day's wages for a Heart Nurse, 100 bags provides the funding for a heart scientist for 7 days and 1,000 bags helps 40 young heart patients to gain independence, new skills and confidence whilst meeting other young heart patients.

22. The Pack for Good campaign did not go ahead for the 2019-20 move out due to the coronavirus lockdown. The BHF furloughed many staff and their shops were closed, making collection of donations impossible. The collection banks on our campuses were still available for use, and some items were stored by the Accommodation team for later retrieval; data on this will be provided by the BHF but we expect this to be much later in the year.

23. To encourage new students starting at Essex in the 2019-20 academic year to use our on-campus water fountains, the Sustainability team collaborated with the Student Engagement team to provide each of them with their own reusable, branded water bottle. There were 7,000 bottles distributed when students registered, as part of their

Welcome tote bag. Due to budget restrictions and caution around item giveaways at the start of term, this won't be repeated in Autumn 2020, however we will continue to review opportunities during the academic year.

24. COVID-19 has unfortunately seen a resurgence of single-use items used in catering outlets. While it is right that cutlery, cups, plates etc. have been replaced by disposable items to limit opportunities for transmission of infection, we will work to mitigate the challenge where possible. During lockdown demand has been greatly reduced so this is less problematic to a degree, but as campus re-opens and food outlets become busier, quantities of single-use items will rise. The products used (cups, takeaway boxes etc.) are Vegware, which are made from plant-based materials (such as sugar cane or potato starch) and therefore have a lower environmental impact than plastic-based products; but they ultimately generate waste. The Sustainability team will work with Essex Food and the Students' Union during this period to promote ways customers can help to reduce waste: for example encouraging people to bring their own cutlery, rather than choosing single-use.
25. The University's purchase of washable, reusable face masks for staff and students sets a positive example to our community, and will help to limit the use of single-use disposable masks. Work will continue throughout the coming academic year to encourage the use of reusable face coverings where appropriate, and correct disposal of single-use masks.
26. As undertaken when Bertrand Russell Tower was refurbished, items were salvaged from Eddington Tower ahead of refurbishment for mechanical, electrical and buildings purposes, including door handles, fire alarm fittings, some white goods & electrical fittings. This results in reduced waste and financial savings, by collecting equipment that can be reused.
27. Central Stores reported that due to lockdown, low numbers of toner cartridges had been sent to them for recycling, and similarly for battery recycling. With far fewer people on campus the need has been lower, however they continue to accept them from teams still working on campus, such as the mechanical fitters who have recently been doing their annual replacements of batteries used in accommodation.
28. A review of drinking water fountains will take place once access across campus is available. At present there are in the region of 85 machines across all three campuses; a combination of fully plumbed-in units and rental machines which are paid for by individual schools/departments. These are all mains-fed, with no bottle-fed units available. The availability of these water fountains reduces the need for staff and students to buy bottled water, which unnecessarily leads to increased plastic waste.

Objective 3: To support sustainable forms of transport

29. Essex Food has been using an electric van for their on-campus movements (Colchester only) since July 2019, and as of mid-July 2020 it has covered 534 miles. This equates to approximately half a tonne of CO_2e direct emissions avoided, compared with a diesel vehicle over the same distance (roughly equivalent to one passenger's share of emissions on a flight from Paris to New York). The University now has four electric vehicles, out of a total fleet of 35 vehicles.
30. In June 2020 a silent auction of five bicycles was held, raising £1200 for the Student Hardship Fund. The bicycles had originally been purchased in 2016 but plans to introduce a loan scheme proved unviable. Instead, it was decided that selling the bicycles to raise funds, at a time when it is particularly pertinent to encourage cycling, would be the best option.
31. The latest Travel and Transport survey took place in November 2019, with students and staff from all three campuses taking part. Of those who participated (767), just over a third (34.3%) reported driving alone, while 23% and 18% walked or took the bus, respectively. These are promising results and show a shift towards sustainable travel

options compared with previous surveys. Conversely, compared with the previous pulse survey (summer 2019), there had been a decline in cycling from 14% to 9%. It should be noted that these surveys provide a snapshot, and results are dependent upon those who choose to respond, rather than a regular review of the same people's habits. We will continue to survey our community to understand their travel choices and understand any changes in behaviour.

32. Journeys are likely to be very different as a result of the pandemic, and the changes to habits that this has caused. A substantial reduction in journeys, on a basic level, is a good thing; less congestion, fewer emissions and better air quality benefits us all, and support Colchester Borough Council's work to improve the town's air quality. However, as life begins to return to normal, this reduction is not likely to be sustained at the same level. Instead, there is a potential opportunity to influence a greater level of home working, where possible.

33. Our travel booking providers, Key Travel and Diversity Travel, now display the CO_2 emissions of flight options when users search for them, indicating the impact of trips. Additionally, Key Travel's search results will display a reminder that rail fares are also available – including Eurostar – where applicable.

34. Over the period November 2018 to November 2019, 3,844 flights were booked for University business. Figure 1 provides details of the purpose of trips. It is estimated that the emissions impact of these flights is 2,188 tonnes. The focus of our environmental impact is typically concentrated on our campuses, but wider effects need to be considered as well. For example, 114 of the flights were UK domestic, and a policy which requires such trips to be taken by train would be a starting point. Covid-19 lockdown has forced us to communicate in new ways, and represents an opportunity for a greater push on video calls rather than travelling in person to meetings. (See Objective 5 re. information technology for detail on the use of Zoom during the pandemic.)

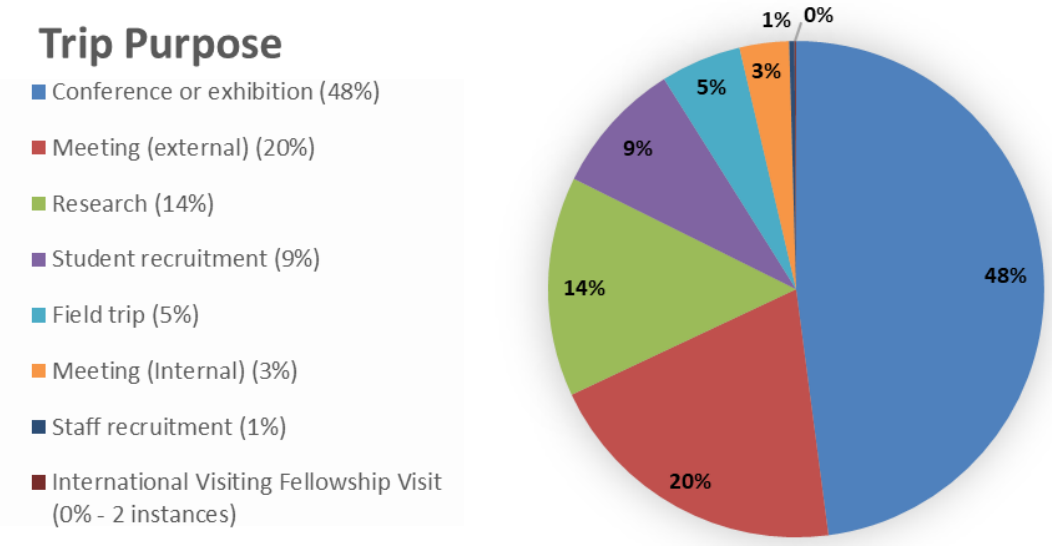


Figure 1. University flight booking purposes

Objective 4: To maximise the quality of the grounds, biodiversity and landscapes

35. Wivenhoe Park continues to participate in the Green Flag scheme, however as a result of the pandemic the review has been delayed and expected to take place in September 2020.

36. External areas have been further enhanced for the enjoyment of our community. Additional seating has been installed on the Silberrad plaza, improvements have been

made to Square 5 and benches installed, and new seating is located in Square 1, offering solar-powered charging points.

37. The Grounds team continues its maintenance and installation of wildlife boxes; to date there are a total of 129 units, including bird boxes, hedgehog houses, duck houses and insect harbourage.

38. The University benefits from over 1500m2 of green roofs on three buildings – Essex Business School, Wivenhoe House Hotel and the Silberrad Student Centre. These roofs feature a range of sedums that are low maintenance and insect-friendly and provide insulation.

39. In 2019 we joined the national 'Hedgehog Friendly Campus' campaign, completing actions to demonstrate our commitment to helping the spiny species. During the 2019 programme period we achieved Bronze status, and for 2020 we are working on reaching Silver. The scheme runs over the calendar year with results confirmed in January.

40. Lockdown has allowed wildlife at Wivenhoe Park to flourish, with sightings of muntjac deer, green woodpecker, kingfisher, an abundance of geese, and even kestrels have nested near to Wivenhoe House Hotel.

Objective 5: To use information technology sustainably

41. Business as usual, in terms of the purchase of energy-efficient equipment, continues for the ITS team, with machines updated as necessary. Furthermore, supporting digital and remote working and learning has become of increased prominence.

42. Box cloud file storage has been crucial for collaborative working and easy access to files for teams now working from home. It eliminates the need to print many types of documents as file sharing is simple, further reducing demand on resources.

43. The University has been using Zoom since August 2019, and in its first seven months saw limited use. However, once the pandemic hit and people had to stay at home, it became a crucial tool many of us had not expected to become so accustomed to in such a short space of time. March 2020 saw a 3073% rise in the number of meetings that took place on Zoom, and from March to June an average of almost 30,000 meetings took place each month, with participants joining from around the world. Over 1000 webinars also take place per month. While a sharp increase is to be expected given the current circumstances, it represents the potential for agile working as well as a reduced need for travel to meetings that do not need to take place in person.

44. These technologies facilitate home working and, for those who do not need to be on campus every day, mean opportunities to reduce our institutional impact on the environment in simple ways. If just 10% fewer staff are commuting to our campuses one day per week, we would be contributing to reduced congestion on the roads, lower emissions and better air quality.

45. 2019 saw the introduction of free printing for students, and the roll-out of MFDs across the Colchester campus, allowing users to print documents from any device on campus. Data from Canon shows a large spike in printing in October 2019, as students returned – a total of close 1.8 million pages in one month (staff and students); prior to this the average total was around 700,000 pages per month. In the first half of the 2019 academic year, average monthly printing was 1.2 million pages per month, but during lockdown this fell to around 110,000 per month. Overall, approximately 70% of printing is duplex, and 80% is mono; these are the default settings when a user prints at an MFD.

Objective 6: To embed sustainability into procurement processes

46. The project to implement a streamlined furniture procurement process is now complete. For regular office furniture this can now be chosen from one supplier, out of a pre-defined pool (i.e. specific types of desk, chairs cupboards etc. to ensure better consistency of styles). For bespoke projects, such as refurbishments of communal

areas, up to three companies can submit bids. Finally, for ergonomic furniture, such as specialist chairs and desks, these can be chosen from one supplier in the same way as regular items. Standardising options allowed the University to set standards in terms of materials used, recyclability at end of life and an assurance of companies' sustainable supply chains, in addition to quality and health and safety regulations.

47. An additional element of the contract means that the supplier will always provide the option to remove (and where possible recycle) any furniture that is being replaced. We will then be provided with data on the materials recovered and their quantities, and the estimated carbon savings as a result of recycling rather than disposal.

48. Questions on sustainability continue to appear in tenders; as a minimum, bidders must demonstrate their own commitments to sustainability, and where appropriate more detailed information is required, for example if a project has a significant sustainability element.

49. Until recently, Essex Food outlets placed orders for supplies separately, often with different suppliers and at different prices. Through a new streamlined process, units' orders will be consolidated and placed together, and distributed to their kitchens and storage areas from one central point. This process will reduce waste, and lead to reduced emissions associated with deliveries as stock will be brought together by suppliers, rather than individually.

Objective 7: To reduce water use

50. Water consumption at the University for 2019-20 is approximately 167,000m^3, based on data from billing and meter readings. Usage monitoring is more accurate since the appointment of the Sustainability Co-ordinator in Autumn 2019, but figures from previous years are less reliable for comparison purposes. For context, in the University's 2019-20 financial year, total spend was £925,750, compared with £1,112,219 in 2018-19; this represents a 16% drop, which we would expect given the much-reduced campus population.

51. Management of water consumption has predominantly been focused on infrastructure, through leak detection and repair work, consolidation of pipework, and more efficient equipment. At present there is no specific target around water reduction; however, this is deemed a key area for future work alongside other utilities, and targets will be set in the next Sustainability Sub-Strategy.

Objective 8: To maximise the amount of food offered at catering outlets derived from sustainable and local sources

52. As detailed in last year's update, local suppliers are used as a preference, offering a variety of menu options across its outlets, catering to different tastes and dietary requirements. Ethically and sustainably produced drinks options continue to be available, with Union Coffee continuing to be popular.

53. Work has been done to refresh the Sustainable Food Policy, as part of work to maintain a strong standing in the People & Planet University League; however, the impact of the pandemic has resulted in a delay to final discussions with the Catering Operations Manager, and ultimately publication of the document.

54. Lockdown proved an opportunity for Essex Food to reorganise their storage, and during their period of reduced operation they have used up stock, being inventive with menus to make the most of supplies they already had, while providing those still on campus with high quality choices.

55. The 'Ethics Food' campaign continues to work to support students through sustainable choices and learning about preferences. In May 2019 a 'We Care' event took place during exams, offering students fruit and lentil crisps, in addition to information about the campaign, to provide them with healthy snacks while they studied. The ethical ethos continued into Welcome 2019, when the popular Essex Food prize wheel returned;

approximately 750 eco-friendly prizes were given out, such as reusable straws and recycled stationery sets, amongst other prizes.

Objective 9: To maximise engagement of staff and students in sustainability issues through the Green Impact and Student Switch Off projects.

56. The Sustainability Engagement team is now fully recruited, with three people working to raise awareness, engage with stakeholders and embed sustainable behaviour change. Under the broad umbrella initiatives of *Reduce, Recycle, Protect* and *Little Choices Big Changes* we are developing information, resources and campaigns that promote action the University is taking, across infrastructure changes and research, and raising awareness of actions that individuals can take. The team is increasingly asked to participate in relevant events and activities, such as staff inductions and student fairs and contributing to communications.

57. As noted in paragraph 24, 7,000 branded water bottles were distributed to new students at the beginning of the 2019-20 academic year. This small, but important gesture demonstrated in a simple way to new students that sustainable behaviour is embedded into University life: that they are encouraged to refill rather than buying bottled water.

58. The Sustainability webpages have been developed further, bringing all relevant information into the main University website, rather than having it separately in the Staff and Student directories. This has made it easier to find updates and has consolidated it together. Work continues to ensure pages are engaging. The WEDM team are preparing to launch Essex Blogs, a feature that will allow the Sustainability team to produce a wider range of content that will be accessible to all.

59. During 2019-20, 36 teams participated in The Green Impact programme (the highest number to date), completing over 1,100 actions to embed sustainable change at the University. There is good representation across academic and professional services departments. It is estimated that each year, teams' participation contributes around 12 tCO_2e in overall emissions savings. This year again saw an increase in the number of teams reaching a Gold award: 14, up from 12 in 2018-19. Two teams again completed a 'Gold Project', an initiative designed and implemented by them, demonstrating on-going commitment to embedding sustainability into their specific work area (a third team had prepared their plan but hadn't been able to implement due to lockdown). Event Essex developed a calendar of events and calls to action where the team carried out actions within different topics that fit around work and home life. Soft FM services carried out an initiative to recycle obsolete equipment and to keep it out of the general waste stream, including old excess equipment and furniture. During the year, seven student volunteers worked with departments to help them with their actions, playing an active role in the programme. Despite lockdown, teams were still supported in completing their actions in time for the submission deadline at the end of April. Some actions were adapted to take home-working into account, and some teams had a deadline extension when members were furloughed or their work focus changed. This year's audits took place online, with training delivered via Zoom, and auditors then reviewed information from home. A total of ten auditors took part, including students, staff and members of the SOS-UK team who oversee the programme.

60. After six years of running the Green Impact scheme, and now with a better-resourced team, the decision has been taken to develop our own, in-house programme for 2020-21 onwards. Named Sustainable Essex, the programme will largely follow the Green Impact format in its first year to ease teams into the change. It will be based on the Moodle platform, allowing us to better integrate into a system that staff and students are accustomed to, and to link more seamlessly with modules being created (see below). During the first year of the in-house programme it will continuously be reviewed to allow us to develop further over time.

61. Prior to lockdown, sustainability-themed Moodle modules were being developed in a dedicated Sustainability page, and this work was accelerated as it became clear that

online learning would become a key point of engagement. Modules available so far include Carbon Literacy, Waste and Recycling, Grounds and Biodiversity and Sustainable Transport. These will be formally launched in the Autumn, with the intention of being linked to from the University's main staff induction page on Moodle.

62. Work has already been undertaken to include Sustainability in staff inductions, with team members speaking at online events during lockdown. As the Organisational Development team refresh their online inductions, additional information related to sustainability, including how staff can get involved and individual actions they can take, will be incorporated.

63. Environment Week was scheduled to take place in mid-March 2020 but had to be cancelled due to the pandemic. Information stands, talks, interactive activities, a film screening and much more were all scheduled to take place across the five days. Once it is safe to do so, we hope to run some of the events, even if on a smaller scale. Until then, the majority of our engagement activities will take place online.

64. In July 2019 the latest People and Plant University League was announced. Essex achieved its highest ever ranking, moving up to 44th place from 124th. This improvement validated the work by an intern who reviewed progress during 2018 and worked on ensuring we met as many criteria as possible at that point. Our performance in the League continues to be an important workstream; in 2019 the Sustainability team recruited a Frontrunner, Justas, who was able to continue with the work already started. Good progress was made up to March, before his placement had to be cut short due to the pandemic. It was later announced by People and Planet that the rankings would not take place in 2020, and instead will return in 2021. We hope to at least maintain a strong position in the next League, if not move further up. The large jump in 2019 is partly attributed to better front-facing information (as P&P review publicly available information for 50% of the overall score), which communicates the work we are doing. To see another step up in the League will require greater cross-university working, as well as more investment in sustainability initiatives. We expect that, in part, the next Sustainability Sub-Strategy will support such progress.

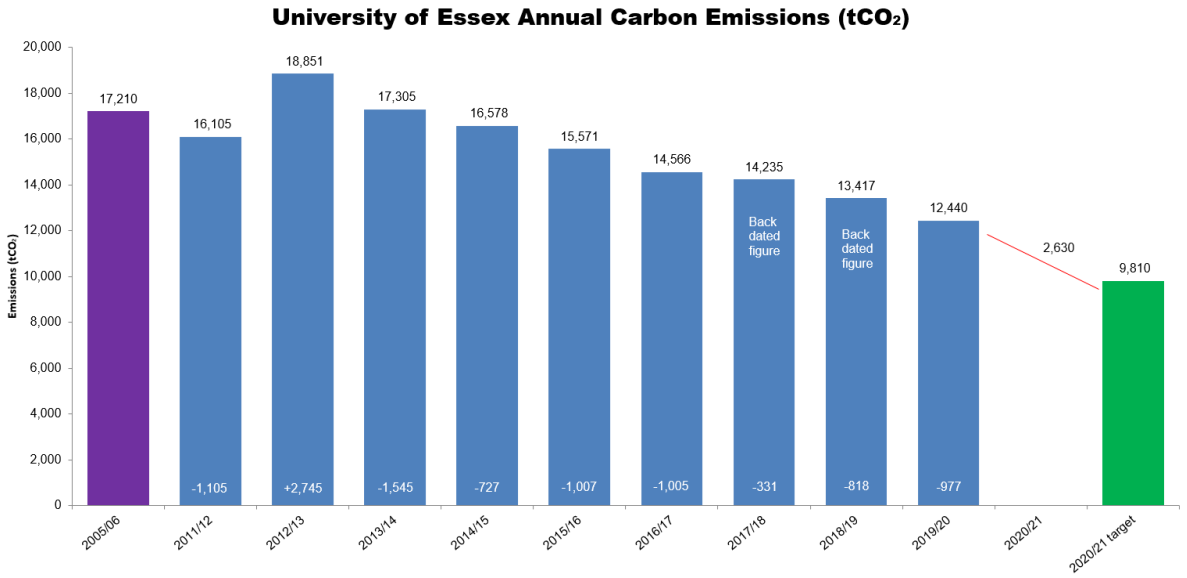
Beyond 2020

65. A restructure within the Sustainability and Grounds team has been implemented creating new roles that allow further work around sustainability and carbon reduction to take place. All roles have now been recruited.

66. Following discussion at the University Steering Group (USG) on 11 February 2020, it was agreed that the importance and urgency of climate issues requires a formal, coordinated response that draws on all key areas within the University. This decision was endorsed by Council at its meeting on 24 February 2020. A petition delivered to the Vice-Chancellor's Office by the Students' Union, signed by hundreds of members of the University further galvanized the effort to take action. Consequently, a Climate Emergency Group was formed of stakeholders from across the University, with support from external consultants. The overarching purpose of the Group is to consider whether the University should declare a climate emergency, and if so, develop the response. This will inform the next Sustainability Sub-Strategy, and it is hoped that engaging with stakeholders in this way will develop buy-in and accountability that demonstrates sustainable development needs everyone's commitment.

67. The University's current key priority is to reduce CO_2 emissions in line with its 43% target from 17,210 to 9,810 tonnes. This is important as it is closely linked with the University's financial success and its ability to deploy resources to teaching and research excellence. The graph below shows the University's emissions pathway to its 43% target. The University has already achieved a 27% reduction, which is an encouraging figure despite its growth both in student numbers and building footprint. A further reduction of 2,630 tCO_2 by 2020-21 is required to reach the target. The target is challenging in the current financial climate, however reduced occupancy at our

campuses during lockdown will have a positive impact, and there is opportunity to move forward with continued home-working where possible to reduce energy demand.



Responsibilities and oversight

68. Responsibility for the Sustainability Sub-Strategy is as follows:

    68.1 Strategy Owners: Deputy Vice-Chancellor and Registrar and Secretary.

    68.2 Strategy Manager: Head of Sustainability and Grounds

    68.3 Approval: USG and Council.

    68.4 Monitoring: University Steering Group will monitor this Sustainability Sub-Strategy via the Sustainability Engagement Group.

69. This is the third annual review of the Sustainability Sub-Strategy. The action plan below shows the success indicators from the Sustainability Sub-Strategy. This marks the final year of the current Sustainability Sub-Strategy, thus a new strategy is in development for 2020 onwards. Clear objectives will still be a crucial part of the programme of work for Sustainability, although the review period will be an opportunity to assess the most suitable success measures, targets and commitments for the coming years.

Recommendation

70. USG is requested to note the findings in the Sustainability Sub-Strategy annual update.

Rob Davey, Head of Sustainability and Grounds

Daisy Malt, Sustainability Manager

10 September 2020

Action Plan: 2016-19

Strategic objective (O)	Success Indicators *Revised indicators in italics*	Timescale *Revised timescale in italics*	Cross reference to Sustainability Sub Strategy	Lead	August 2020 Update
Energy and Carbon emissions The University will use the energy necessary to heat and power our three campuses as efficiently as possible and reduce the amount of energy derived from fossil fuels.					
1. To optimise energy management to reduce net carbon emissions	1. Heat and power usage will fall annually.	August 2017	O1	Energy Manager	1. Achieved. kWh consumption from gas & electricity have fallen every year since 2012.
	2. The University will generate 15% of its energy from renewable sources.	August 2018 *August 2019*			2. Ongoing. The University is preparing for installation of additional solar PV panels, while electricity from the grid became 100% renewable in October 2019.
	3. The costs associated with energy usage fall annually.	August 2017			3. Market fluctuations have seen the price of energy change markedly over the last 3 years. CPU successfully agreed a price for October 2019 to September 2022 when the market was favourable.

Strategic objective (O)	Success Indicators *Revised indicators in italics*	Timescale *Revised timescale in italics*	Cross reference to Sustainability Sub Strategy	Lead	August 2020 Update
	4. CO_2e emissions will be 12,500t CO_2 and on course to fall by 43% on 2005 levels by 2020.	August 2018	O1	Carbon Change Advisor	4. Ongoing. Emissions for 19/20 were 12,440 tCO_2. The current trajectory is positive, however reaching the target may be challenging.
	5. Emissions per FTE student and per m^2 will be among the top quartile for higher education institutions.	August 2018			5. Achieved. University 22nd/125 for emissions intensity. Emissions per student continue to fall and remain below 1 tonne.
	6. New buildings will be constructed to exceed the energy performance requirements of Building Regulations (Part L) and be informed by BREEAM Excellent and LEED energy certification	August 2017			6. Achieved. All new buildings exceed Part L and are informed by high environmental standards. All buildings adhere to BREEAM Good as a minimum.

Strategic objective (O)	Success Indicators *Revised indicators in italics*	Timescale *Revised timescale in italics*	Cross reference to Sustainability Sub Strategy	Lead	August 2020 Update
Waste Management The University will manage consumable resources in accordance with the waste hierarchy with priority given to waste reduction, opportunities to reuse materials then recycling and recovery of energy.					
2. To reduce waste production and maximise waste recycled	1. The University will recycle over 80% of its waste materials. This will be achieved through both on and off campus waste separation processes. The University will increase the amount of waste segregated for recycling on campus to 50% (peak) and an average monthly to 40%).	August 2019	O2	Domestic Services Manager	1. Achieved. The University separated 44% (peak figure) of its waste for recycling on campus in 2019. The remaining 61% of waste is sent to MRF (material recovery facility) of which 88% is recycled. The remaining 12% produces RDF (refuse derived fuel) off campuses.
	2. Less than 5% of waste will be sent to landfill.	August 2017			2. Achieved. <1% of University waste sent to landfill.
	3. Waste arising will be in the lowest quartile for higher education institutions.	August 2017			3. Data not available currently.

Strategic objective (O)	Success Indicators *Revised indicators in italics*	Timescale *Revised timescale in italics*	Cross reference to Sustainability Sub Strategy	Lead	August 2020 Update
Transport The University will encourage sustainable transport through provision and promotion of infrastructure and incentives.					
3. To support sustainable forms of transport	1. The University will increase promotion and provision of alternatives to car use, ensuring improved access, cycle maintenance, cycle security, cycle training with routine evaluation of impact undertaken.	August 2017	O3	Transport Policy Manager	1. On-going. The University continues to promote sustainable options to staff, students and visitors. A review of transport infrastructure and travel was undertaken in 2018/19 with recommendations being reviewed.
	2. The University will Improve washing and shower facilities with priority given to women's facilities.	August 2017			2. Achieved. Upgrades to shower facilities in November 2017.
	3. The University will increase provision of electric vehicle infrastructure with access to charging points at all University car parks.	August 2017			3. Achieved. Six new charging points were installed in the North Towers car park, increasing provision to twelve. Plans are under way to install charging points under podia for University-owned EVs.
	4. Consideration will be given of transport infrastructure provided in conjunction with our local authorities in Colchester, Southend and Loughton. *1. For cars purchased or leased the environmental impact should not exceed 100g CO2/Km (tax band A).*	August 2018 *August 2018*			4.1; 4.2 Achieved. The Fleet Vehicle Policy requires that all new vehicles University purchased must adhere to these emissions requirements, which encourage the use of low- to no-emissions choices.

Strategic objective (O)	Success Indicators *Revised indicators in italics*	Timescale *Revised timescale in italics*	Cross reference to Sustainability Sub Strategy	Lead	August 2020 Update
	2. *For light vans the environmental impact should not exceed 120g CO2/Km (tax band B).*	*August 2018*			
Biodiversity The University will maintain and enhance its urban and parkland landscapes through monitoring and protecting the species found within them. The University recognises its Colchester, Southend and Loughton campuses are fantastic assets and will use them to champion sustainability by providing well managed access to its landscapes for its students, staff and the wider community.					
4. To maximise the quality of the grounds, biodiversity and landscapes	1. The University will undertake annual monitoring of its landscapes and report on changes.	August 2017	O4	Grounds Manager	1. Achieved. Yearly Tree survey undertaken. Maintaining the Green Flag Award requires stringent monitoring of the estate.
	2. Additional installations of bio-diversity enhancing infrastructure including bird feeders, insect boxes, apiaries.	August 2017			2. Achieved. Additional planting and maintenance of wildflower areas to attract bees and other insects; bird boxes are cleaned annually and replaced where necessary. In total there are 129 wildlife 'houses'.
	3. The University will derive benefits from its grounds that contribute to the health and well-being of its staff, students and visitors and develop a suite of infrastructure improvements allowing for increased access and enjoyment of its grounds.	August 2018			3. Achieved. Additional enhancements to Colchester lower lake, improvements to lake at Loughton and improvements to areas outside at Southend and Colchester to make it more inviting and accessible, to allow all

Strategic objective (O)	Success Indicators *Revised indicators in italics*	Timescale *Revised timescale in italics*	Cross reference to Sustainability Sub Strategy	Lead	August 2020 Update
					students to enjoy the outside spaces.
IT Services The University recognises that IT contributes significantly to our carbon footprint. The University will seek to purchase the most energy efficient equipment, use it efficiently and foster sustainability through IT equipment and apps.					
5. To use information technology sustainably	1. The University will monitor & record energy use from the PCs, Laptops and Printers it owns or leases. 2. The University will procure the most energy efficient IT equipment. 3. The University will encourage the use of sustainable IT resources in education and research; with automatic power down after lectures, and Moodle & Lynda providing alternatives to printed handouts and travelling to training.	December 2016 December 2016 December 2016	O5	Director of IT Services	1. The University does not currently have the equipment necessary for this work. Focus remains on purchase of energy-efficient equipment. 2. Achieved. 3. Achieved.

Strategic objective (O)	Success Indicators *Revised indicators in italics*	Timescale *Revised timescale in italics*	Cross reference to Sustainability Sub Strategy	Lead	August 2020 Update
Procurement The University will purchase goods and services in accordance with the highest environmental standards, engaging with our supply chain so that no harm to our students and staff is attributable to the products we buy and that minimal resources are utilised in their manufacture, transport and disposal.					
6. To embed sustainability into procurement processes	1. The University will monitor and publish its emissions derived from its supply chain on an annual basis.	August 2017	O6	Deputy Director of Finance (Procurement)	1. The University estimates its scope 3 emissions to be 23,000 tCO_2. The methodology only provides an estimate of emissions based on University revenue.
	2. The University will monitor and publish actions its suppliers have undertaken to reduce the environmental impact of its supply chain.	August 2017			2. Partly achieved. In tenders suppliers must provide environmental policy information, but these are not explicitly shared more widely.
	3. The University will divert its investments into a Sustainable and Responsible Investment Vehicle eliminating investments in tobacco, arms and fossil fuel industries.	January 2017			3. Achieved. The University no longer invests in these industries.
	4. *The University will include questions on bidders' environmental and sustainability policies as part of its procurement processes.*	*January 2018*			4. Achieved. Questions are included as standard.
	5. *The University will include questions on Modern Slavery in its procurement processes to ensure that no members of the supply chain are being exploited.*	*August 2018*			5. Achieved. Questions are included as standard.

Strategic objective (O)	Success Indicators *Revised indicators in italics*	Timescale *Revised timescale in italics*	Cross reference to Sustainability Sub Strategy	Lead	August 2020 Update
Water The University will manage its water so that the absolute minimum is used; where possible derive water from grey water sources and use rain water for landscaping activities. The University will take care to process water to the highest environmental standards and avoid polluting the local water courses which are vital habitats and of substantial amenity value.					
7. To reduce water use	1. The University will achieve annual reductions in its water use.	August 2017	O7	Energy Manager	1. Achieved. Water reductions from leak detection and repair & installations of water efficient equipment.
	2. Water use will be in the lowest quartile for higher education institutions.	August 2017			2. Sector benchmarking not currently available.
	3. The University will install infrastructure to utilise grey water and rainwater.	August 2018			3. Ongoing. Rainwater is used to water the gardens in EBS.
	4. The University will take care to process water to the highest environmental standards and avoid polluting the local water courses which are vital habitats and of substantial amenity value.	August 2017			4. Achieved. Water samples taken from all 3 main University lakes on a quarterly basis and water quality good.
Food The University will serve healthy food prepared with the minimum harm to nature. The University will champion ethical production, alternatives to meat, local ingredients and avoid foods derived from endangered species.					
8. To maximise the amount of food offered at catering outlets derived from sustainable and local sources	1. The University will maintain its Fairtrade accreditation status.	October 2016	O8	Catering Operations Manager	1. The University does not hold Fairtrade accreditation. The University works with a range of suppliers who offer standards higher than Fairtrade.
	2. The University will avoid foods derived from endangered species by using Marine	October 2016			2. Achieved. Only MSC certified fish sold on

Strategic objective (O)	Success Indicators *Revised indicators in italics*	Timescale *Revised timescale in italics*	Cross reference to Sustainability Sub Strategy	Lead	August 2020 Update
	Stewardship Council certified fish. 3. The University will ensure that 100% of its meat is Red Tractor assured. 4. The University will source its meat from local suppliers. 5. The University will source 100% of its eggs from free range sources. 6. The University will promote meat-free alternatives across its catering outlets. 7. The University will provide and promote opportunities for food grown on our campuses. 8. The University will use 100% recyclable or compostable food packaging.	 October 2016 October 2016 October 2016 October 2016 October 2016 August 2017			Campus. 3. Achieved. Only Red Tractor Meat sold on campus. 4. Achieved. Meat sourced locally. 5. Achieved. 100% free range eggs sold on campus. 6. Achieved. Extensive range of meat-free options on campus, and expanding. 7. Achieved. Campus farm relocated with new infrastructure, managed by Green Thumbs society. 8. The majority of takeaway packaging is compostable or biodegradable.
Engagement The University will inspire its stakeholders to engage in positive environmental behaviours taking skills and enthusiasm gained in each of our three campuses beyond the University to make a positive contribution to the global environmental challenge.					
9. To maximise engagement of staff and students in sustainability issues through the Green Impact project.	1. The University will host the UK's leading Student Switch Off programme, measured by student engagement. 2. Staff in every department will participate in the University's Green Impact	August 2017 August 2017	O9	Carbon Change Advisor	1. An alternative approach to Student Switch off was introduced offering better value for money. 2. On-going. The University had 36 participating Green

Strategic objective (O)	Success Indicators *Revised indicators in italics*	Timescale *Revised timescale in italics*	Cross reference to Sustainability Sub Strategy	Lead	August 2020 Update
	programme. 3. The University will be recognised as a community leader in sustainability in the local media and through securing awards for environmental performance. 4. Staff and students involved in sustainability research will be recognised as contributing to the University's excellence in education. 5. Education for sustainability will be provided to all staff and students as part of their induction to life on our three campuses.	 August 2017 August 2017 August 2017			Impact teams in 2019/20. 3. Achieved. The University won the Green Flag Awards for its Grounds, and People's Choice top 10. 4. Environmentally-related research is published on the University website and via social media 5. On-going. Summer School in Sustainable Practice available to students. Moodle modules being developed by Sustainability team, available to all. Organisational Development including sustainability information in staff inductions.