SUSTAINABILITY SUB-STRATEGY

2016-19

University of Essex

INTRODUCTION

1. The Sustainability Sub-Strategy is a sub-strategy of the Estates and Equipment Supporting 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 sustainable campuses that are comfortable, beautiful and inspiring places to work and live.

2. The four pillars of our values and identity are i) research mindset; ii) the Essex spirit; iii) culture of membership, and iv) global outlook. The University recruits students from 135 countries, and has an active study abroad programme placing students in many countries for study. It also recruits academic and professional staff from many different countries. A central component of fostering a community with global impact is a desire to act responsibly and with leadership over its use of and impact on natural resources in a world facing environmental challenges around climate change, resource depletion, water shortages, food supply and biodiversity loss.

3. Since 2010, the University's central response to the environmental agenda has focused on its direct and indirect impact on carbon emissions. A Carbon Management Plan sets out infrastructure and activities required for the University to meet a target of reducing by 2020 total carbon emissions (in the form of carbon dioxide equivalent) by 43% from a 2005 emissions baseline. The UK government's Climate Change Act (2008) mandates the UK to reduce its national carbon emissions by 80% by 2050.

4. As carbon emissions are mainly determined by the use of heat and power, the main focus has been on reduction in the use of costly utilities combined with a gradual growth in renewable energy generation.

5. The University is committed to grow its student numbers by 50% on 2012-13 by the end of the Strategic Plan period. It is seeking growth in numbers of academic and professional staff to ensure i) student-staff ratios improve to approximately 15.5:1; ii) an increase in number of REF-submissible academic staff to approximately 600 by the next REF census date; and iii) increases in professional services staff to support fully the ambitions of a growing university whilst also achieving economies of scale in delivering professional service activities. Growth in all operations will put further pressures on the university to make best and most sustainable use of its built and natural environments.

AIMS OF THE SUSTAINABILITY SUB-STRATEGY

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. There are eight objectives to the SSS, each addressing areas of prime concern to the sustainability of the University's operations:

   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 embed sustainability into procurement processes;
   7.6 To reduce water use;
   7.7 To maximise the amount of food offered at catering outlets derived from sustainable and local sources;
   7.8 To maximise engagement of staff and students in sustainability issues through the Green Impact and Student Switch Off projects.

O1: TO OPTIMISE ENERGY MANAGEMENT TO REDUCE NET CARBON EMISSIONS

8. In 2012-13, the University emitted 18,850 tonnes of carbon (as CO_2e) per year. Our campuses have grown substantially since 2012-13 – by over 14,000m^2 and over 4000 students, however, with the construction of energy efficient buildings such the Forum in Southend and the Essex Business School in Colchester, combined with energy efficient building refurbishment and stakeholder engagement, emissions have fallen to 15,571t CO_2e in 2015-16.The target for 2020 is 9809 t CO_2e. USG approved a plan to achieve this target in Nov 2014. This will be challenging, but will result in both lower emissions and recurrent cost savings.

9. The costs associated with energy are substantial. However, continuing efficiencies in heat and power use on our three campuses have generated significant savings. In 2015-16 the University's electricity and gas bills were £2,375,400 and £851,000 respectively, down from £2,419,700 and £1,149,230 in 2014-15. This amounts to a combined saving of £342,530.

10. A number of projects have achieved notable carbon savings: including LED lighting installation (700 t CO_2e saved per year), lighting controls (118 t CO_2e), updates to building management systems (200 t CO_2e), voltage optimisation (150t CO_2e), roof insulation (173 t CO_2e), EBS building (170t CO_2e), motion sensor lighting (100 t CO_2e), and room heating controls (50t CO_2e). Solar photovoltaic panels (PV) were installed on Parkside, Sports Centre and Networks Centre buildings in 2015, and will generate 164,000kWh of electricity annually, saving 80 t CO_2e annually.

11. During 2014-15 the University generated 0.4% of electricity from renewable sources. The most recent installations have now increased this to over 1% of electricity. The University is currently working with local government, energy services companies (ESCOs) and local land owners to ascertain the potential for generating renewable heat and power on land adjacent to our Colchester campus, supplying in the region of 15% of the Universities energy from renewable sources.

12. The University has made efficiency gains in relation to carbon emissions and costs per student and per unit of gross internal area (Table 1).

O2: TO REDUCE WASTE PRODUCTION AND MAXIMISE WASTE RECYCLED

13. The University now recycles more than 50% of its waste, which compares well with the UK average of 47%[1]. Total waste production has also declined in recent years, from 1757 tonnes in 2009-10 to 1215 tonnes in 2014-15. Waste sent to landfill has been almost eliminated, and waste not separated for recycling is now processed at an external energy production facility.

14. The University has achieved good recycling rates through the provision of recycling infrastructure in Colchester, Southend and Loughton. This has further helped to reduce the total waste produced. By reducing waste sent to landfill, the University avoids £100,000 in costs from the landfill tax.

15. The University, the Students' Union and British Heart Foundation work together on an annual *No Waste Graduation* programme. Students living in residences are able to donate goods to British Heart Foundation at the end of Summer Term. During the 2015-16 graduation, 10 tonnes of materials were collected, saving the University approximately £600 in disposal costs and raising over £20,000 for British Heart Foundation.

Table 1. Measures of carbon efficiencies per unit built area and per student, 2005-2016

Measure	2005-06	2012-13	2013-14	2014-15	2015-16
Carbon emissions (t CO_2e per year)	17,210	18,850	17,304	16,619	15,571
Gross internal area (m^2)	181,186	224,134	228,500	236,605	238,805
Student population	7311	10,656	10,429	13,179	14,775
Carbon emissions per unit area (t CO_2e per m^2)	0.094	0.084	0.075	0.073	0.069
Carbon emission per student CO_2e per FTE)	2.35	1.8	1.65	1.44	1.05

1 UK Statistics on Waste, Defra, 2015 *https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/487916/UK_Statistics_on_Waste_statistical_notice_15_12_2015_update_f2.pdf*

O3: TO SUPPORT SUSTAINABLE FORMS OF TRANSPORT

16. The University encourages sustainable transport through a range of infrastructure and incentives, including:

At Colchester, Southend and Loughton:

- 16.1 Investment in cycle paths and walking routes;
- 16.2 Car-sharing schemes;
- 16.3 Season-ticket loans and discounts for public transport;
- 16.4 CCTV monitored, sheltered cycle parking;
- 16.5 Showers and wash facilities;
- 16.6 Bike purchase financial-incentives for staff;
- 16.7 Electric vehicle financial-incentives for staff.

At Colchester and Southend:

- 16.8 On-campus cycle repairs;
- 16.9 Bikes, bike locks, lights and other equipment available to purchase;
- 16.10 Cycle proficiency training;
- 16.11 Electric vehicle charging points;
- 16.12 Promotion of local government sustainable transport initiatives via membership of travel plan clubs.

At Loughton:

- 16.13 Discounts for students travelling on London Underground.

17. More staff travel to work by means other than individual car use. However, individual car use is the preferred choice of 46% of staff. Two-thirds of drivers face difficulties commuting to work due to traffic congestion.

18. Student demand for car parking has also increased. Given the nature of public transport (particularly at the Colchester campus), it is likely that demand for car parking will continue to grow as the University grows and businesses locate to the Knowledge Gateway.

19. The University supports the need for car use by both staff and visitors, and expects the number of vehicles arriving on campus to increase as the University grows. The University will continue to promote and provide alternatives to car use that are tailored to the needs of commuters in Colchester, Southend and Loughton, expand the provision of technologies that allow for cleaner transport and work with local authorities to invest in transport infrastructure that reduces congestion in the communities surrounding our campuses.

O4: TO MAXIMISE THE QUALITY OF THE GROUNDS, BIODIVERSITY AND LANDSCAPES

20. The University's three campuses have different natural assets and thus require different forms of management:
    - 20.1 The greater Colchester campus has 18 different habitats, including rare acid grassland, freshwater grazing marsh, specimen trees, woodlands, lakes and grasslands in the historic parkland, the Knowledge Gateway research park, and related natural habitats;
    - 20.2 The Southend campus is primarily built estate in the town centre;
    - 20.3 The Loughton campus comprises a small natural environment that supports the Hatfield house, theatre and outbuildings.

21. The University is developing a landscape management plan to allowing the review and documentation of existing management techniques, create new management techniques based on gap analysis and ultimately make best use of its grounds in service of staff and student users. The Colchester campus supports a wide range of important wildlife, including bats, otters, nightingales, adders, grass snakes, butterflies and ladybirds. A number of activities have recently enhanced the campus whilst reducing potential negative environmental impacts, including:
    - 21.1 Amending the yearly cut areas of grass on campus to encourage wild-flower growth: formally cut areas have been reduced by 15%;
    - 21.2 A total of 4,000m^2 of wildflower turf installed since 2012;
    - 21.3 Organic, home-brewed fertiliser used on sports fields;
    - 21.4 No drift pesticides used;
    - 21.5 Installation of bat and bird boxes.

22. The Edge Hotel School is developing a plan to use the campus garden to teach sustainable food production to support and provide local ingredients to The Brasserie.

23. The Healthy University Sub-Strategy (2016-19) sets out the benefits to health and well-being of regular use of and access to the natural environment, and will tie in closely with the landscape management plan. This will include QR code-based walks, and provision of infrastructure to encourage regular use of the campus.

O5: TO USE INFORMATION TECHNOLOGY SUSTAINABLY

24. The University owns and leases over 3500 desktop PCs, 450 laptops and over 450 printers. The cost to run these machines in business hours equates to an electricity bill of over £20,000 per annum. The University specifies IT equipment that is energy efficient and fitted with power-down software. However, it is estimated that £10,000 per annum is spent on machines that are not switched off at the end of the working day.

25. The University recognises that energy use from IT equipment goes beyond what is listed above – including privately owned equipment such as smart phones, student computers and teaching aids such as over over-head projectors and specialised IT equipment. The University's IT Services department has instigated policies that specify only the most energy efficient equipment is purchased.

26. The University's IT Services department has instigated a room management policy, whereby there are automatic room shut downs when teaching rooms are not in use.

27. Following a trial at the University's Southend Campus, the University's IT Services department is considering a roll out of Multi-functional devices (MFDs) that allow users to print, photocopy and scan from the same machine, in place of desktop printers. Data from the trial shows that during the 3 month period over £450 was saved in avoided printing.

28. The Student Switch Off & Green Impact programmes encourage staff and students to consider resource efficiency when using IT equipment.

29. The University makes sustainability gains from use of IT in teaching and research: Lynda software has enabled more training activity to take place online, reducing the need for travel; Moodle provides students and lecturers with an online facility for document sharing, reducing printing, and accessing Listen Again.

2 53% of staff, surveyed in 2015, travelled by means other than individual car use including by bus (16%), car share (11.3%), walking (10.9%), bicycle (9.9%), train (4.4%), taxi (0.3%), work from home (0.3%), park & ride (0.1%)

O6: TO EMBED SUSTAINABILITY INTO PROCUREMENT PROCESSES

30. The University causes carbon emissions through its procurement of goods and services. Emissions from the supply chain are estimated to be about 22,000 t CO_2e per year (using a standard developed by Defra based only on gross expenditure). The University has a sustainable procurement policy which governs the purchase of goods and services, requiring high environmental standards. Sustainability has also been added to the curriculum of procurement training given by the University's procurement team to purchasers of goods and services at the University.

31. Procurement is also a key feature of the University's Green Impact programme. As part of Green Impact, plumbed water coolers have been installed in four locations, thus reducing resource use for plastic bottles, transport and disposal. Cost savings at one location amount to £500 per year.

32. The University's Council has approved a policy to switch external investments to an appropriate Sustainable and Responsible Investment vehicle, and this will be implemented in 2016-17.

O7: TO REDUCE WATER USE

33. Water consumption has fallen from 227,000 m^3 in 2012-13 to 159,000 m^3 in 2014-15 across the entire University estate.

34. The University has invested in Automatic Meter Reading (AMR) smart meters, which has allowed engineers to address abnormal water use immediately; water use in Southend accommodation fell from 52,000m^3 to 27,000m^3 when AMR meters detected leaks. AMR also allows the University to receive accurate billing from its utility provider which has further reduced the headline water consumption figure. The University is currently reviewing water pressure supplies. A pilot project in South Courts reduced water use by 1000m^3 per annum. The project will be rolled out to other accommodation areas during the 2016 Summer Vacation period.

O8: TO MAXIMISE THE AMOUNT OF FOOD OFFERED AT CATERING OUTLETS DERIVED FROM SUSTAINABLE AND LOCAL SOURCES

35. The University places sustainable food at the centre of its catering offer. The University is a registered Fairtrade University, and UECS has a sustainable food policy covering local sourcing of food, humane treatment of animals in the food chain, exclusion of unnecessary additives, minimisation of deliveries, and promotion of recycling.

36. A key aspect of the University's response to sustainable food is to minimise wasted food and compost food that ends up in the bin. Chefs employed in University kitchens and students in training at the Edge Hotel School are trained in waste minimisation. The leftovers amounting to 12% of total waste tonnage is sent for composting.

37. The next step for waste minimisation is an overhaul of food packaging. Beginning in the new academic year, the University will expand its use of food packaging derived from plants. This allows for composting of the packaging as well as the food and therefore makes plate clearing and food disposal more efficient, increasing space and time for other jobs in catering outlets.

38. The University of Essex Student Union sets policies in line with the wishes of its members. However, University staff have been working with the SU, via the Green Impact programme, as well as targeting specific areas such as food packaging to align the SU policy with that of the University.

39. A variety of promotions have been undertaken as part of Green Week, including a meat-free Friday. Catering staff of UECS are participating in the Green Impact programme, and developing sustainable food cultures through the provision of delicious and healthy foods.

O9: TO MAXIMISE ENGAGEMENT OF STAFF AND STUDENTS IN SUSTAINABILITY ISSUES THROUGH THE GREEN IMPACT PROJECT.

40. The University has substantially increased the amount of stakeholder engagement around sustainability in 2015-16. Engagement focuses around working with staff, students and visitors to campus to promote environmentally-positive behaviours. The University relaunched its Green Impact programme in 2015 with an awards ceremony for our greenest staff, with 120 in attendance. There are now 40 Green Impact teams improving sustainability in departments and sections, up from 4 in 2014-15. A total of 170 sustainable actions have been completed by since September 2015. An initial evaluation using the Carbon Trust's impact calculator demonstrate the substantial savings delivered within the Estates Management Section: 200 staff will have contributed towards more than 50 t CO_2e reduction and saved £3,500 from energy bills.

41. The Student Switch-Off programme, run in conjunction with Estates and Accommodation staff, supported by the NUS aims, to reduce energy use in student accommodation. In 2015-16, electricity use fell an average of 5.3% compared with the average use between 2011-12 and 2013-14. Award ceremonies for student groups in flats and houses with the best impact are held in the summer term (Ben and Jerry's Ice Cream Party).

42. The University recognises that its staff and students have immense enthusiasm for sustainability as well as substantial knowledge and expertise in the green economy. Set up in Autumn 2015, the Sustainability Engagement Group is chaired by the Director of Estate Management Section, and brings together interested staff and students to engage in sustainability projects and leveraging their knowledge, expertise and enthusiasm. Projects undertaken by Sustainability Engagement Group include a review of printer usage on campus and the procurement of water bottles as an alternative to disposable plastic.

43. The University recognises its importance to the local community. The University actively participates in local environmental consultations and works with local government officers on sustainability. Staff from the University recently assisted Colchester Borough Council on its Heat Networks programme and have enabled the council to gain £50,000 in funding from the Department of Energy and Climate Change (DECC), have contributed to the Essex County Council (ECC) run Essex Community Energy Fortnight, host ECC's Waste Busters on our three campuses, attend Southend Borough Council Business Sustainability events and have been recognised for environmental performance at county business award ceremonies. Working with the community provides an opportunity for knowledge exchange and promotes the University to key external stakeholders that have an influence over University development, for example via the planning system. The recently appointed Chief Scientific Adviser to ECC will liaise on environmental matters as part of this post.

44. The University has established from 2016-17 the Centre for Environment and Society to coordinate cross-disciplinary research and education around sustainability and the environment. It will provide a network of skilled staff to aid in implementation of the SSS.

45. The University does not consider existing national league tables that seek to measure environmental performance as being accurate and comprehensive. The University has made many efficiency gains, and has much still to do. Progress will be measured through the action plan and targets.

SUSTAINABILITY SUB-STRATEGY: PLAN OF ACTION 2016-2019

46. The University will prioritise a range of actions over the next three years of this Strategic Plan period to ensure improvements are made to each of Objectives 1-8.

47. This section contains Specific, Measurable, Attainable, Relevant and Time-bound actions for implementing sustainability across our campuses and beyond.

48. Objectives have been chosen that either i) reduce our impact on the environment, locally and globally or ii) improve our environment, locally and globally.

RESPONSIBILITIES AND OVERSIGHT

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

    49.1 Strategy Owners: Deputy Vice Chancellor and Registrar and Secretary.
    49.2 Strategy Manager: Carbon Change Advisor.
    49.3 Approval: USG and Council – October and November 2016.
    49.4 Monitoring: University Steering Group will monitor this Sustainability Sub-strategy via the Sustainability Engagement Group
    49.5 Date of review: The Sustainability Sub-strategy will be reviewed annually; first review scheduled, USG, 23rd October, 2017.

ACTION PLAN: 2016-19

Strategic objective	Success Indicators	Timescale	Cross reference to Sustainability Sub Strategy	Lead
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. 2. The University will generate 15% of its energy from renewable sources. 3. The costs associated with energy usage fall annually.	August 2017 August 2018 August 2017	01	Energy Manager
	4. CO2e emissions will be 12500t CO2 and on course to fall by 43% on 2005 levels by 2020. 5. Emissions per FTE student and per m2 will be among the top quartile for higher education institutions. 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 2018 August 2018 August 2017	01	Carbon Change Advisor
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 60% of its waste materials. 2. Less than 5% of waste will be sent to landfill. 3. Waste arisings will be in the lowest quartile for higher education institutions.	August 2017 August 2017 August 2017	02	Deputy Director of Estates (Soft Services)

Strategic objective	Success Indicators	Timescale	Cross reference to Sustainability Sub Strategy	Lead
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. 2. The University will Improve washing and shower facilities with priority given to women's facilities. 3. The University will increase provision of electric vehicle infrastructure with access to charging points at all University car parks. 4. Consideration will be given of transport infrastructure provided in conjunction with our local authorities in Colchester, Southend and Loughton.	August 2017 August 2017 August 2017 August 2018	03	Transport Policy Manager
Bio-diversity 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. 2. Additional installations of bio-diversity enhancing infrastructure including bird feeders, insect boxes, apiaries. 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 2017 August 2017 August 2018		Grounds Manager
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	05	Director of IT Services

Strategic objective	Success Indicators	Timescale	Cross reference to Sustainability Sub Strategy	Lead
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. 2. The University will monitor and publish actions its suppliers have undertaken to reduce the environmental impact of its supply chain. 3. The University will divert its investments into a Sustainable and Responsible Investment Vehicle eliminating investments in tobacco, arms and fossil fuel industries.	August 2017 August 2017 January 2017	06	Deputy Director of Finance (Procurement)
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. 2. Water use will be in the lowest quartile for higher education institutions. 3. The University will install infrastructure to utilise grey water and rainwater. 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 August 2017 August 2018 August 2017	O7	Energy Manager

Strategic objective	Success Indicators	Timescale	Cross reference to Sustainability Sub Strategy	Lead
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. 2. The University will avoid foods derived from endangered species by using Marine 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 October 2016 October 2016 August 2017	08	Catering Operations Manager
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 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 August 2017 August 2017	09	Carbon Change Advisor