ESTATES COMMITTEE

Date of Meeting: 23rd March 2018
Title of Paper: Annual Climate Change and Social Responsibility Performance Report
Purpose of Paper: To provide an update on headline climate change performance for the financial year 2016/2017.
Intended Outcome: For information
Paper Submitted by: Roddy Yarr (Assistant Director, Sustainability and Environmental Management)
Any items protected from publication under the Freedom of Information Act, rationale and associated timescale that should be exempt from publication.
Key contact(s):
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1.0 Introduction

This note reports on initiatives and actions being taken to tackle climate change mitigation and adaptation across the University estate for the financial year 2016/2017. It also outlines performance against the University's Strategic Plan Carbon Reduction Target.

The University continues to make good progress in tackling a range of climate change mitigation and adaptation aspects. During the year there has been a concentrated focus on the installation of the £20M Combined Heat and Power District Energy Scheme which is now 73% complete against a target of 75%. The delay has been caused by very challenging ground conditions encountered across parts of the campus. Despite this, it is anticipated that the project will be completed on time and on budget at the end of October 2018.

In addition to the £8M grant already secured from the Scottish Funding Council (SFC), the University has secured a further £900K in the form of an interest free loan. This funding will be used to enhance the operation of the district heating scheme once operational and provide further financial and carbon savings. There is ongoing investment in energy reduction projects using the SALIX energy investment fund. These include the deployment of more efficient fume cupboard air handling across a number of labs in the Thomas Graham Building and the Robertson Wing. Cumulatively these projects have reduced energy use by ~10% since 2010 .

2.0 University Strategic Plan Carbon Reduction Target

The University's Strategic Plan carbon target requires a reduction of CO_2e of 25% by 2020 based on a 2009/2010 baseline. This equates to a reduction from 30,000 tonnes of CO_2e to 22,500 tonnes by 2020.

The target is essentially a measure of the gross carbon emissions across the whole of our estate relative to the gross internal area of our campus and it is made up of two main emissions sources: a) grid electricity, and b) fossil fuel combustion. That includes electrical consumption in buildings, gas consumption in boilers for heating and hot water, gas consumption in labs, and petrol and diesel consumption in University fleet vehicles. In simple terms, electrical consumption accounts for 60% of our emissions and heating for 40% and in terms of trends over the past 4 years, there is a rising demand for electricity (7% increase) and a flat or slightly reduced demand for gas (2% less).

2.1 Commentary on Current Target Performance

At the end of the financial year 2016/2017, the University's carbon emissions were 25,363 tonnes of CO_2e, a reduction of 15% since the baseline year as illustrated in Figure 1 which also shows the 'business as usual', (BAU) trajectory if we had not initiated carbon reduction plans. Reductions have been achieved through a down-sizing of the estate; investment in energy efficiency; and the decarbonisation of the electricity grid. Since our 2009/10 baseline year the intensity of emissions of our campus buildings measured by the amount of energy per square metre of space has reduced by 25%. This is against a backdrop of a 12% increase in the physical campus footprint as illustrated in Figure 2.

However, these reductions and efficiencies are being offset by continued growth in built development with more highly serviced buildings and greater hours of occupancy. This will continue to be a challenge in the years to come and a significant effort will be needed to ensure that existing building efficiency is improved and that any new buildings are designed to be low carbon exemplars.

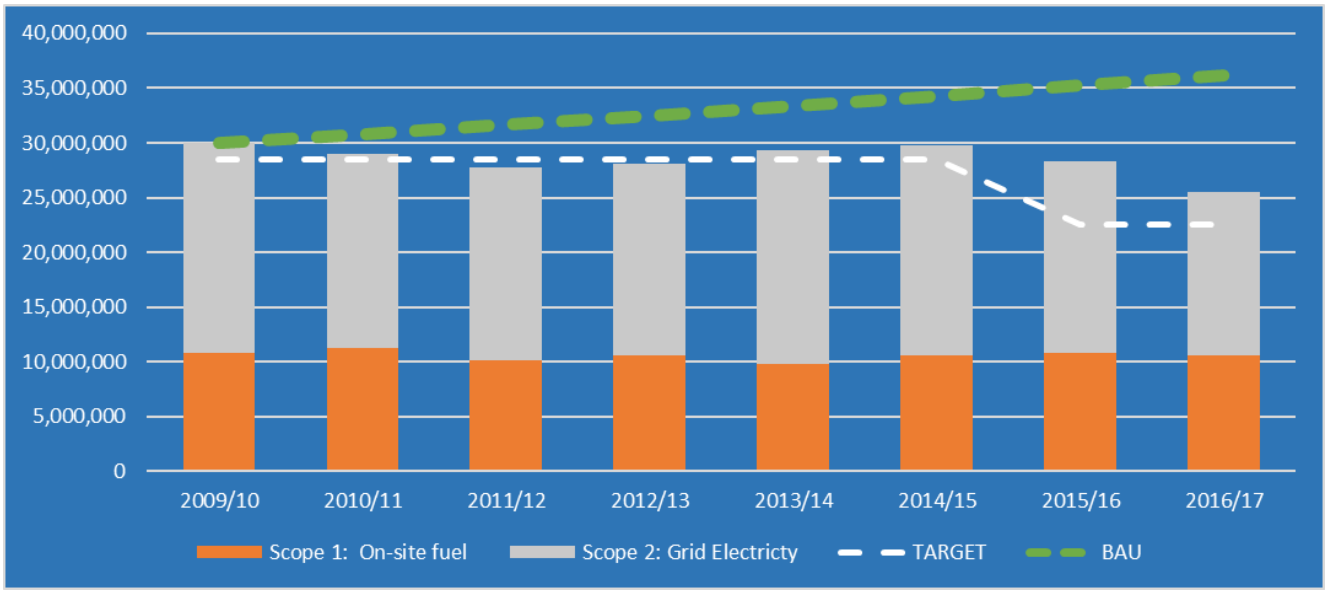


Figure 1 – Absolute CO_2 Emissions

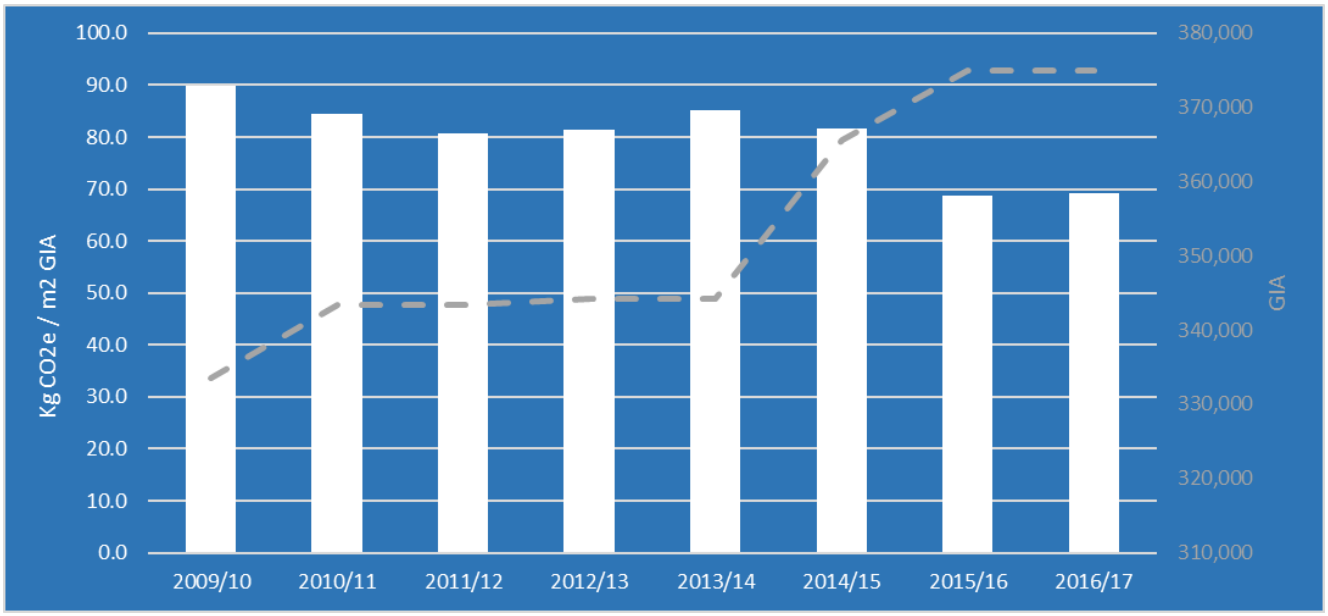


Figure 2 –Relative CO_2 Emissions

2.2 Factors Affecting Current and Future Performance

2.2.1 Current Performance

- There has been a significant downward shift in grid electricity emissions factors in 2016/17 as more UK renewables come on line, and this has reduced campus emissions associated with electricity purchases.
- As we expand our estate, the Gross internal area (GIA) rises. This GIA figure has a major impact on the emissions KPI. How much depends on the scale and pace of investment and divestment.
- Construction: Changes in our building stock e.g. new buildings, divestment of buildings, refurbishment, all have a large impact on our emissions KPI. Generally, new buildings have higher energy demands but are more energy efficient e.g. TIC.
- Demand Growth: Within our existing spaces energy demand tends to increase over time e.g. increases in energy demand from I.T. systems, laboratory cooling and mechanical ventilation.

2.2.2 Future Performance

- Further emissions reductions are anticipated in 2018/19 and 2019/2020 from the completion of the district heating project (~4,000 TCO_2e) and SALIX enabled energy efficiency projects (~850 TCO_2e).
- As noted above, three additional carbon reduction projects received SFC funding support in December 2017 and these will contribute further reductions of ~470 TCO_2e.
- An increase in emissions will result from new developments that are more highly serviced and used more intensively, for example, the new Centre for Sport and Health building (+1,230 TCO_2e), and the pending Learning and Teaching and Wolfson redevelopments. Taking on more buildings will add to this challenge and increase our emissions.
- Future step changes in carbon emissions will be dependent on city-wide solutions and collaboration with others.
- A new climate change mitigation and adaptation plan beyond 2020 will take into account the University's '2025 Vision'.

3.0 Combined Heat and Power (CHP) District Energy Project – The Strathclyde Commitment

As part of the University's Climate Change and Social Responsibility Policy, the University is committed to ensuring the delivery of socially progressive outcomes through its procurement processes. This commitment has been applied to the Combined Heat and Power District Energy Project and the Sport, Health and Wellbeing projects through contractual clauses. These clauses are being used to build a range of economic, social and/or environmental conditions into the delivery of major capital projects. Some examples of the 'Strathclyde Commitment' that are already being delivered at the University are contained within Appendices 1 and 2.

4.0 Cost of Utilities and Water reduction

Last year there was a reduction in utilities costs of £250,000. This was due to a public sector procurement saving on natural gas rates. In terms of water use reduction, the main success in 2016/17 was through the Sustainable Labs programme where waterless condensers were deployed across a number of laboratories. This has saved in the region of two million litres of water to date.

5.0 Climate Change Reporting Duties

The University is required to respond to the Climate Change Reporting Duties which are part of the Climate Change (Scotland) Act 2009. The University has submitted its annual report to the Scottish Government since the pilot year of 2014/2015. This year, the University volunteered to trial the Government's External Accreditation process for the data that we use to collate the report. The University was the only Scottish institution included in this trial. The process was successful and it helped us and the Government to understand the issues with the collation of robust data across the public sector.

6.0 Climate Change Adaptation

The Climate Change Reporting Duties noted above require institutions to bring forward plans to cope with the impacts of climate change adaptation, increased rainfall, extreme weather events and installation of more robust infrastructure. A number of initiatives are now underway to adapt to climate change issues and these are noted below:

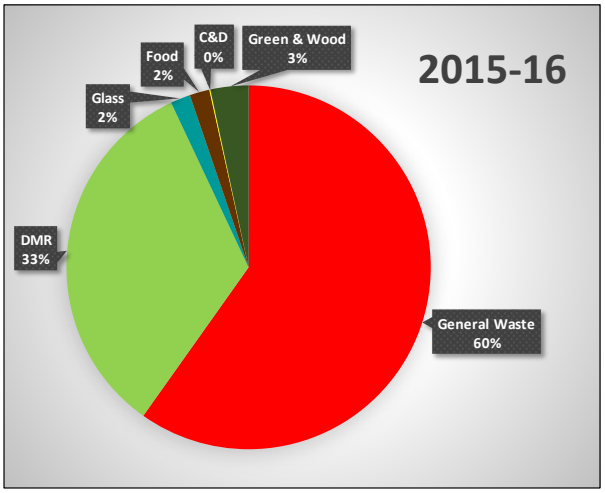
- The University has joined the Glasgow City Resilience Group led by Glasgow City Council.
- The University is represented on the Board of Climate Ready Clyde, a collaboration between a range of organisations in the River Clyde catchment including Local Authorities, NHS, Universities and Scottish Government.

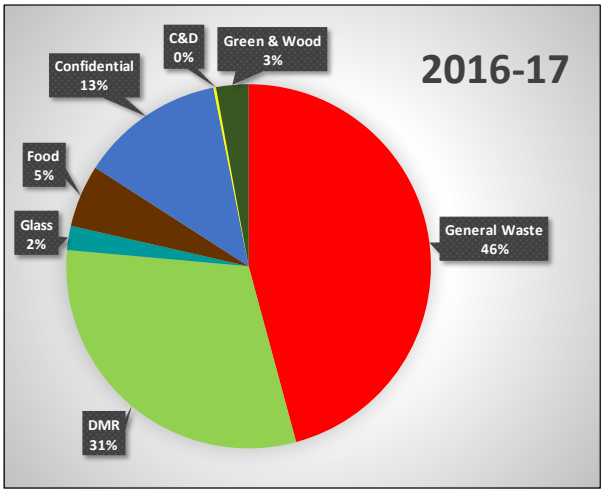
- Climate Change Adaptation solutions are being integrated into new building designs, e.g. a green roof on the new Learning and Teaching Building.
- A Climate Change Adaptation Policy is being developed.

6.0 Waste Resource Management

The University is continuing to seek to improve source segregation of materials and there has been a decrease of 14% in general waste volume since 2015-16. 11% of the total waste volume was sent to landfill in 2016-17, with the rest being recycled or used for energy generation.

Waste contractors' data continues to improve in its accuracy, enabling us to record and track more waste





streams. One of the waste streams we are able to monitor better is confidential waste, which accounted for nearly 14% of the total volume of waste produced in 2016-17. In October 2017 a new confidential waste service was introduced, where departments make use of a single contractor and raise requests internally for monthly scheduled uplifts. The service has been well received and the University has benefited from a simplified and streamlined operation, with a fully transparent resource management system.

Resource Reuse – The Reuse, Recycling and Resource Centre (RRREC) at Corn Street

Our approach to resource reuse has also continued to develop, in that we have been working with the Business Improvement Team to launch the Reuse, Recycling & Resource Centre (RRREC) centre at Corn Street. Corn Street is an off-site facility where we are able to utilise the space as a reuse center including furniture and other items, as well as employing bulk material recycling.

7.0 Staff, Student and Wider Stakeholder Engagement

During 2016/17, engagement activities grew exponentially compared to the previous year, with staff and students at the university actively engaging with sustainability on a much greater level than observed before. Campaigns and events were held regularly throughout the year, promoting issues such waste reduction, Fairtrade, active travel and responsible resource use. Student engagement programme "Student Switch Off" engaged over 1000 students living in halls whilst saving money & resources. Over 40 staff actively engaged in behaviour change programme "Green Impact", whilst pioneering new sustainability & wellbeing rewards programme "JUMP" was developed and has just been launched as a pilot to 250 staff. A detailed breakdown of initiatives is included at Appendix 3.

7.1 Student Focused Activities

The Estates Services Environment team has also worked to maximise their impact on a wider regional scale. “Making Glasgow a Sustainable Food City” was hosted as part of Engage with Strathclyde, engaging sector leaders on the important links between health, wellbeing & sustainability. Our external events have engaged well over 1000 people and have allowed us to create community partnerships from which we continue to benefit.

The University’s Community Garden continues to prosper and grow with increased participation of staff regularly engaging with gardening and the well-being benefits that arise. All of the food produced during the year was donated to the Glasgow City Mission and was gratefully received.

7.2 Sustainable Labs (S Labs)

S-Labs is a national environmental accreditation programme that aims to make labs safer, more successful and sustainable. Over the past year the sustainable labs programme has grown to encompass eight more new teams from three different departments across campus; Physics, Pure and Applied chemistry (PAC) and Strathclyde Institute of Pharmacy and Biomedical Sciences (SIPBS). This brings the total number of S-lab teams to 21 teams compared to 13 teams in 2016.

The S-Labs Incentive Fund provides new energy and water-efficient equipment continues to be exchanged in place of old ones. In the last year, 40 waterless condensers have been bought, bringing the overall total of waterless condensers bought through the S-labs initiatives to 110 with a resultant water saving.

During the year the first S-labs PhD Credit Course was launched with great success. This was a trial that took place in the Pure and Applied Chemistry Department, where PhD students from across seven different labs took part. The course consisted of a lecture in which the students were introduced to the importance of sustainability within the lab, and a workshop in which students monitored the energy consumption of different equipment within their lab. This course will run again next year and will be open to all science and engineering PhD students from across campus.

7.3 Living Lab Initiatives

The Estates Environment Team also works with academic colleagues to enable students to undertake campus-based sustainability projects integrated with course curriculum, research activity, or as a volunteer opportunity. To date, more than 130 students across a number of faculties have worked on projects in partnership with the Sustainability Team across several faculties covering a wide range of social, environmental, technical and commercial practice areas.

8.0 Sustainable Transport

8.1 Cycling Infrastructure and Initiatives

Our cycle parking capacity has doubled since 2015 from 311 spaces to 625 parking spaces in 2016/2017 and a number of initiatives have been launched to support the use of this improved infrastructure.

8.1.1 Cycling Scotland Internship

The University secured funding from Cycling Scotland for a Campus Cycling Officer Intern, Clement McGeown. The aim of this internship is to drive the development of cycling infrastructure and uptake of cycling across all University facilities. Initiatives launched to date include:

- Dr. Bike sessions;
- Led bike rides across the city;
- "Do It Yourself" bike maintenance sessions;
- Security Tagging.

8.1.2 Cycle Friendly Employer Award

In late 2017, the University applied for Cycling Scotland's Cycle Friendly Employer award for 4 of its facilities: PNDC, AFRC, Ross Priory and the Estates Service Directorate Building (181 St. James Rd) to encourage and facilitate cycling as a way for staff to commute to and from work. Ross Priory has secured improved cycle parking facilities. PNDC have improved their changing facilities, and AFRC have re-organised their allocation of lockers to staff. Estates Services is increasing the amount of bike parking available within their building.

8.1.3 Future Initiatives - Cycle Friendly Campus

The University is working towards a 'Campus Cycle Friendly Award' application for the John Anderson Campus, before the end of the 2017/18 academic year. In preparation for this application, two new cycle hubs are to open on campus imminently; one in the Curran underground car park, the other in the Royal College Cartway. These secure parking and bike maintenance facilities will help reduce the potential for bike theft on campus, as well as giving our staff and students indoor areas to change, maintain their bikes and get information pertaining to active travel in Glasgow.

8.2 Electric Vehicles

Following the successful trial of a Nissan electric van in 2015 the University successfully secured funding in March 2017 for the lease of five electric vehicles (EVs) and associated charging infrastructure.

Estates and Procurement Services utilised Community Planning Partnership funding (£54K) from a number of our Local Authority partners to secure a three-year lease of three Nissan Leafs based at AFRC, PNDC and Richmond Street; and two Renault Zoe's at Estates Services and Richmond Street. The EVs will be used as pool cars in the first instance and they will be formally launched in 2017/18. The vehicles at AFRC and PNDC are already in use.

The Energy Savings Trust provided 100% grant funding (£45K) for the installation of a charging point for each University facility including public charging units at AFRC and PNDC. Charge points are now live at AFRC, PNDC and at Estates Services garage. The rapid charger at PNDC has proved to be particularly popular and this asset is particularly welcome as it fills a gap on the national charging infrastructure network. The sites at Richmond Street await the CHP works in that area to be completed.

Further funding is being sought for charging posts and pool vehicles at Ross Priory to replace the existing Ford Transit and minibus. This would save money on vehicle lease, fuel and maintenance costs.

Some of our new fleet of EVs outside TIC.

9.0 Ecology and Biodiversity

During the year, 31 fruit trees were planted on site to help replace those which were removed during the installation of the Combined Heat and Power District Energy Project. A further 120 trees are to be planted across the University estate as part of this tree replacement programme. These indigenous trees are being procured via the Woodland Trust.

Pupils from St Mungo's P6 class help Lord Provost Eva Bolander to plant fruit trees in Rottenrow Gardens

10.0 Fairtrade and Sustainable Procurement

The University achieved full Fairtrade accreditation in 2017. A Fairtrade Steering Group consisting of representatives from the Environment Team, the Students Assocation and Catering teams meets on a regular basis to ensure that there is continual improvement in this area.

11.0 Awards and Achievements

The following environment and sustainability awards and accreditations were secured by the University during the year.

- Soil Association Bronze Award for the Catering Team at TIC
- Green Business Tourism Scheme Bronze Award for the Conference and Events Team at TIC
- Cycle Friendly Employer Award at Estates Services – This award is given for individual sites that make an effort to engage and support staff in taking up cycling as a viable commuting option.

Appendix 1

Combined Heat and Power District Energy Scheme – 'Strathclyde Commitment' Example

University of Strathclyde CHP & District Energy Network
'Strathclyde Commitment' Report, Table of Actions and Activities Underway

No.	Commitment
1	Employ local staff
2	Employ 4 direct apprentices and 10 sub-contractor apprentices
3	Offer 4 paid work placements for a minimum of 12 weeks
4	Offer 4 undergraduate/ graduate internships
5	Engage with the Townhead & Ladywell Community Partnership Project (initially by attending their monthly meetings) 
6	Open Days/ participate in fundraising
7	Utilise SME for local businesses
8	Facilitate an analysis of local supply chain impact for the project so that a socio-economic assessment can be made (via Fraser of Allander Institute)
9	65% target for local spend on project

Appendix 2

Sport, Health and Wellbeing Development - University of Strathclyde students complete construction mentoring scheme

A group of engineering students studying at the University of Strathclyde were given a special construction site tour of the institution's new £19.6m sport, health and wellbeing facility.

The third-year students have completed a seven-month mentoring scheme supported by GRAHAM Construction, the company building the state-of-the-art facility for the university.

Students were given an introduction into many different aspects of the construction process, shadowing surveyors in GRAHAM's Glasgow office and completing tours of active sites including the company's 13-storey Bath Street Student Accommodation project.

UoS First year students visiting Bath Street Student accommodation project

Another GRAHAM employee working on the site is 24-year-old Daryn McCallum from Knightswood. Daryn completed a degree in Construction Management at Glasgow Caledonian University in May 2016 before undertaking a 4-week work placement in January. He was then offered a permanent contact as a Trainee Site Manager for the construction company.

UoS Mentoring Programme - 3rd Year Engineering Student

Appendix 3
Estates Committee Report: Stakeholder Engagement Activities

Internal Events 2016 -2017

Name	Date	No. of people engaged
European Week for Waste Reduction 2016	21-25th November 2016	200-300, predominantly students
Go Green Week 2017	13-17th February 2017	~150, mainly students
Fairtrade Fortnight 2017	27th February-12th March 2017	~100, mainly students
Green Impact Student Auditing Day	15th March 2017	11 students took part in the full day course
Sustainable Strathclyde Awards 2017	18th May 2017	Attended by 40-50 staff
Bike Week 2017	10-18th June 2017	~50-100 staff and students.
Strathclyde Fresher's Week 2017	11-15th September 2017	500+ students
Stationery Stations	ongoing	1000+ students over the course of the project since September 2016
Sustainable Strathclyde Student welcome event	4th October 2017	15 students
European Week for Waste Reduction	20-24th November 2017	~200 students

External Events 2016 -2017

Name	Date	No. of people engaged
Community Clean up with St Mungo's Primary School	September 2016	N/A
2050 Climate Group Youth Summit @TIC	26th November 2016	200+
Glasgow Goes Green Festival 2017	15th February 2017	300+
Edinburgh University Careers Talk	22nd March 2017	~30
Engage with Strathclyde "Making Glasgow a Sustainable Food City"	2nd May 2017	~40
Film Screening "Climate Change & Scotland's Future", as part of Climate Week	21st September 2017	120+
Glasgow Climathon	27th October 2017	40+
Community Tree Planting Event with Vital & St Mungo's Primary School	30th November 2017	40+
Circular Economy Cub Launch event	8th February 2018	~40
Glasgow Goes Green Festival 2018	16th February 2018	400+
EAUC	ongoing	~100
SSN	ongoing	~700

Engagement Initiatives 2016 – 2017

Name	Date	No. of people engaged
Green Impact/ Sustainable Laboratories	2016/17, 2017/18	80+
Student Switch Off	2016/17, 2017/18	Potential reach of 1500 students every year
JUMP	2017/18	Currently 100 staff, up to 250 during pilot
Campus Community Garden	2016 onwards	30+
Online Newsletter	2016 onwards	300+

Strategic Engagement Activities

Considerable effort has been made to engage with stakeholders that can help to positively influence the University's ability to tackle climate change. Much of this focus has been on communications with Glasgow City Council (GCC), particularly with respect to the District Heating Scheme, future campus plans and City Deal. The proposals to pedestrianise a number of streets across campus have and will continue to require dialogue with the Council. A note of the stakeholders and aspects discussed is noted below:

- GCC Roads Department – road safety, more disabled bays, pedestrianisation, pedestrian safety, drop kerbs, crossing points, CHP
- GCC Planning – Heart of the Campus Project relandscaping of Rottenrow Gardens and pedestrianisation of Richmond Street, North Portland Street, Rottenrow.
- GCC City Deal Team – to engage with and comment on the opportunity for collaboration on the investment in urban realm works at John Street, Cathedral Street and George Street.
- GCC 'Ruggedised' Team – to determine a methodology for the creation of a city wide Energy Services Company that may enable heat to be traded with the Council as part of a city centre district heating scheme.
- Community Planning Partnerships – funding of £54K was secured from three of our Local Authority partners to fund 5 electric vehicles across our learning and teaching facilities.
- Climate Ready Clyde – the University is represented on the Climate Ready Clyde Board
- Scottish Government – the University continues to engage with the Low Carbon Infrastructure Transition Programme that aims to allocate funding to organisations and groups that can bring forward low carbon energy projects.