Annual Climate Change and Social Responsibility Performance Report

An update on headline climate change performance for the financial year 2017/2018.

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 2017/2018. 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 55% of our emissions and heating for 45% and in terms of trends over the past 4 years, there is a rising demand for electricity (1% increase) and a flat or slightly reduced demand for gas (4% less).

2.1 Commentary on Current Target Performance

At the end of the financial year 2017/2018, the University's carbon emissions were 22,510 tonnes of CO_2e, a reduction of 25% 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. 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.

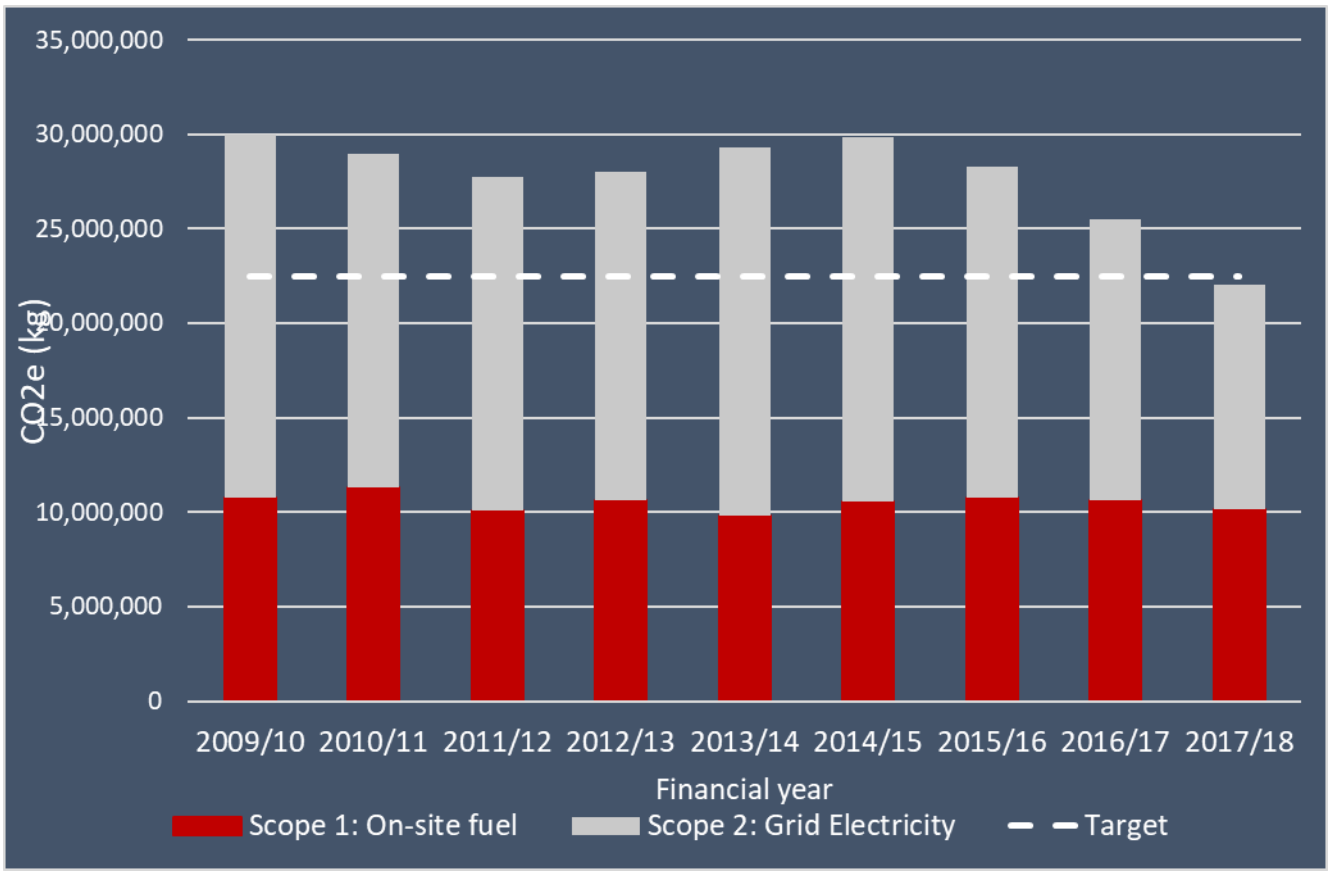


Figure 1 – Strategic Carbon Reduction Target

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 2017/18 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.
- 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 (2,000 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 University is close to completing the installation of this exciting district heat and power project. The new Energy centre and Demonsttration Space is being commissioned and is scheduled to begin operation at the end of 2018. The project has connected to 16 buildings at the John Anderson campus and a further two connections are planned.

4.0 Cost of Utilities and Water reduction

During 2017/18 there was an increase in utilities costs of £370,000. This was due to a rising wholesale market for gas and electricity and a rform on the water market rateable values. The respective rate increases were 6% for electricity, 12% for gas and 21% for water. These unusually high increases in rates masked rerductions in consumption of 1% for electricity, 11% for weather corrected gas and 4% for water.

5.0 Community Benefits – The Strathclyde Commitment

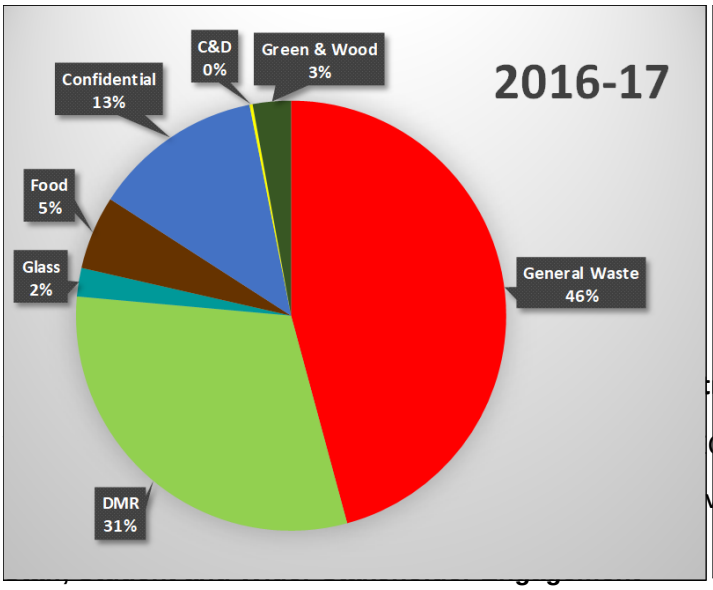
6.0 Climate Change Adaptation

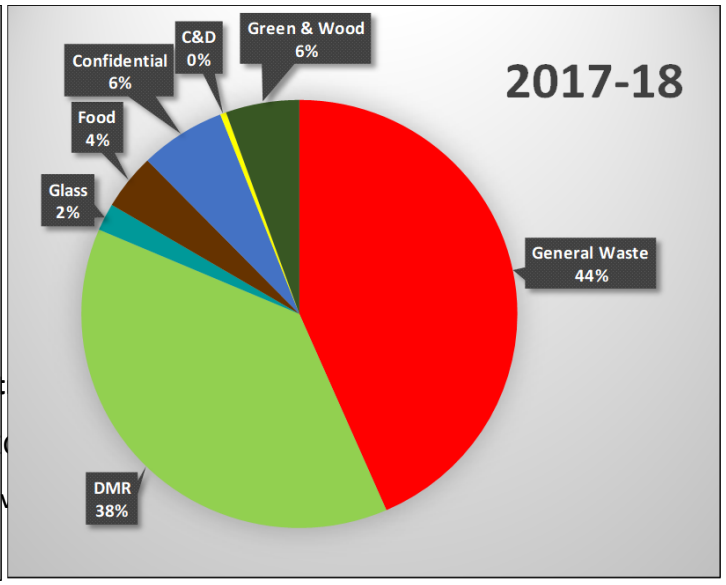
The Climate Change Reporting Duties noted above require institutions to bring forward plans to cope with the impacts of climate change adaptation, increased rainfall, extreme weather events and installation of more robust infrastructure. A number of initiatives are now underway to adapt to climate change 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 30% in general waste and a 26% reduction in total waste arisings compared to the previous year.





During the 2018/19 academic session, engagement acies continued to see staff and students getting involved on wider levels.Over five week-long campaigns centered around themes of Fairtrade, waste-reduction and climate action, events, social media content and city-wide collaboration engaged new audiences with Sustainable Strathclyde's work. Engement programme "Student Switch Off" achieved a 17% reduction of energy and saved 22 tonnes of CO2. The second year of the "Jump" engagement and behavioural reward programme engaged with 283 Strathclyde staff members and, through their logged actions, avoided 50 tonnes of CO2, saved 7,000 disposable cups and facilitated 3,500 active travel journeys. A detailed breakdown of initiatives is included at Appendix 2.

7.1 Student Focused Activities

Over the academic year, there have been three major student-focused initiatives. Firstly, through working with the Business School's Management Development Programme, Sustainable Strathclyde have supported students to create the Sustainable Strathclyde Society, which organises events and produces social media content for students. Students directly involved through their course gain course credits for this activity. Also, through the Environmental Entrepreneurship MSc programme, one student delivered a business growth plan to Sustainable Strathclyde fo their course project. This focused on developing the community garden area.

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 distributed to staff and students that were involved.

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 503 parking spaces in 2017/2018 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:

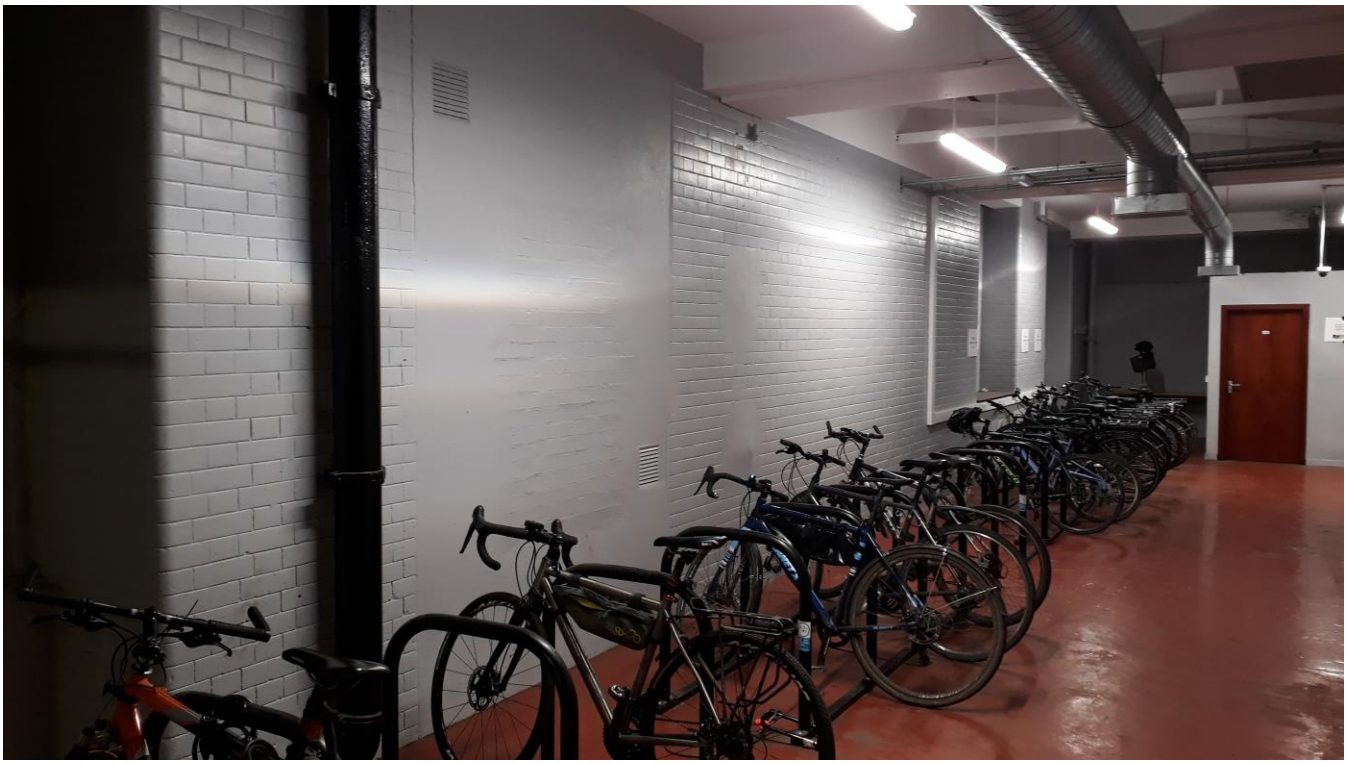
- Dr. Bike sessions;
- Led bike rides across the city;
- “Do It Yourself” bike maintenance sessions;
- Security Tagging.

8.1.2 Cycle Friendly Employer Award

In 2018, the University was awarded Cycling Scotland’s Cycle Friendly Employer award status for 3 of its facilities: PNDC, AFRC 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 achieved ‘Campus Cycle Friendly Award’ status for the John Anderson Campus, before the end of the 2017/18 academic year. Two new 40 space cycle hubs opened 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, Estates Services garage and Richmond Street. 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 Richmond Street vehicles are being fitted with Co-wheels telematics systems and will be formally launched to all staff in the autumn. Formal training is being planned and will be delivered through the Development and Training Gateway. This will enable a smooth transition for staff from driving manual transmission, internal combustion vehicles to automatic transmission, electric vehicles.

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, planning for the integration of rain gardens, green roofs, green walls have begun. These climate adpation and biodiversity solutions will be integrated within new and emerging capital projects as part of the University Sustainable Design Quality Standards.

10.0 Fairtrade and Sustainable Procurement

The University achieved full Fairtrade reaccreditation in 2017. A Fairtrade Steering Group consisting of representatives from the Environment Team, the Students Assocation and Catering teams is now working on the creation of a joint set of Fairtrade Policy statements.

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 Silver 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'

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

No.	Commitment Target Area	Actions	Progress
1.	Employ local staff	• Local staff level at 65%. Utilisation of local sub-contractors and staff.	Complete
2.	Employ 4 direct apprentices and 10 sub-contractor apprentices	• 3 'craft' apprentices within the offsite fabrication team and 2 employed on site. • 5 subcontractor apprentices on site	Complete
3.	Offer 3 work placements for a minimum of 12 weeks	• 3 Engineering placements worked over Summer 2018	Complete
4.	Offer 4 undergraduate/graduate internships	• 7 undergraduate/graduates have worked on the project	Complete
5.	Engage with local primary school 	• Tree planting event took place on 30th November 2017 with children from St Mungo's primary school with attendance from the Lord Provost of Glasgow • Environmental presentation given to the children from St Mungo's primary school on the 23rd November 2017 by Hugh Thompson and Amy Ritchie	Complete
6.	Hold Open Days/participate in fundraising	• VE sponsored the University Climate Change Adaptation event on 21st September 2017	Complete
7.	Utilise SMEs for local businesses	• Project team already utilising SME for work packages	Complete
8.	Facilitate an analysis of local supply chain impact for the project so that a Socio-Economic Impact Assessment (SEIA) can be made	• The Fraser of Allander Institute has completed their SEIA Report	Complete
9.	65% target for local spend on project	• Local spend final figure of 71%	Complete

Appendix 2

Stakeholder Engagement Activities

Events and Networking 2017 - 2018

Name	Date	No. of people engaged
European Week for Waste Reduction 2017	November 2017	200-300, predominantly students
Go Green Week 2018	13-17th February 2018	~150, mainly students
Fairtrade Fortnight 2018	27th February-12th March 2018	~100, mainly students
Sustainable Strathclyde Awards 2018	18th May 2018	Attended by 40-50 staff
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
EAUC Participation	ongoing	30+
Climate Ready Clyde Participation	ongoing	50+

Engagement Initiatives 2016 – 2017

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