

Annual Climate Change and Social Responsibility Performance Report

An update on headline climate change performance for the financial year
2018/2019.



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For Honours and Further Education
2019

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 2018/2019. 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 commissioning and operation of the £20M Combined Heat and Power District Energy Scheme which is now 100% complete and operational. After some initial teething issues resulting in excess heat being rejected by the CHP and low heating efficiencies, we are now seeing the system delivery significant cost and energy efficiency savings to the University.

During 2018/19 some of the District Energy Scheme highlights are as follows:

- The system was operational for 99% of the time (well above the 92% target)
- The installation achieved CHP Quality Assurance accreditation making it exempt from Climate Change Levy.
- Over 1,000 tonnes of carbon diverted from the atmosphere by generating and consuming our own electricity.

2.0 University Strategic Plan Carbon Reduction Target

The University's Strategic Plan carbon target requires a reduction of CO₂e of 25% by 2020 based on a 2009/2010 baseline. This equates to a reduction from 30,000 tonnes of CO₂e 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 for heating and hot water, gas consumption in labs, and petrol and diesel consumption in University fleet vehicles and standby generators. In simple terms, grid electricity consumption accounts for 26% of our emissions and natural gas consumption for 74%.

2.1 Commentary on Current Target Performance

At the end of the financial year 2018/2019, the University's direct carbon emissions were 22,593 tonnes of CO₂e, a reduction of 25% since the baseline year as illustrated in Figure 1. Reductions have been achieved through a down-sizing of the estate; investment in energy efficiency; investment in the Energy centre and DH pipework 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.

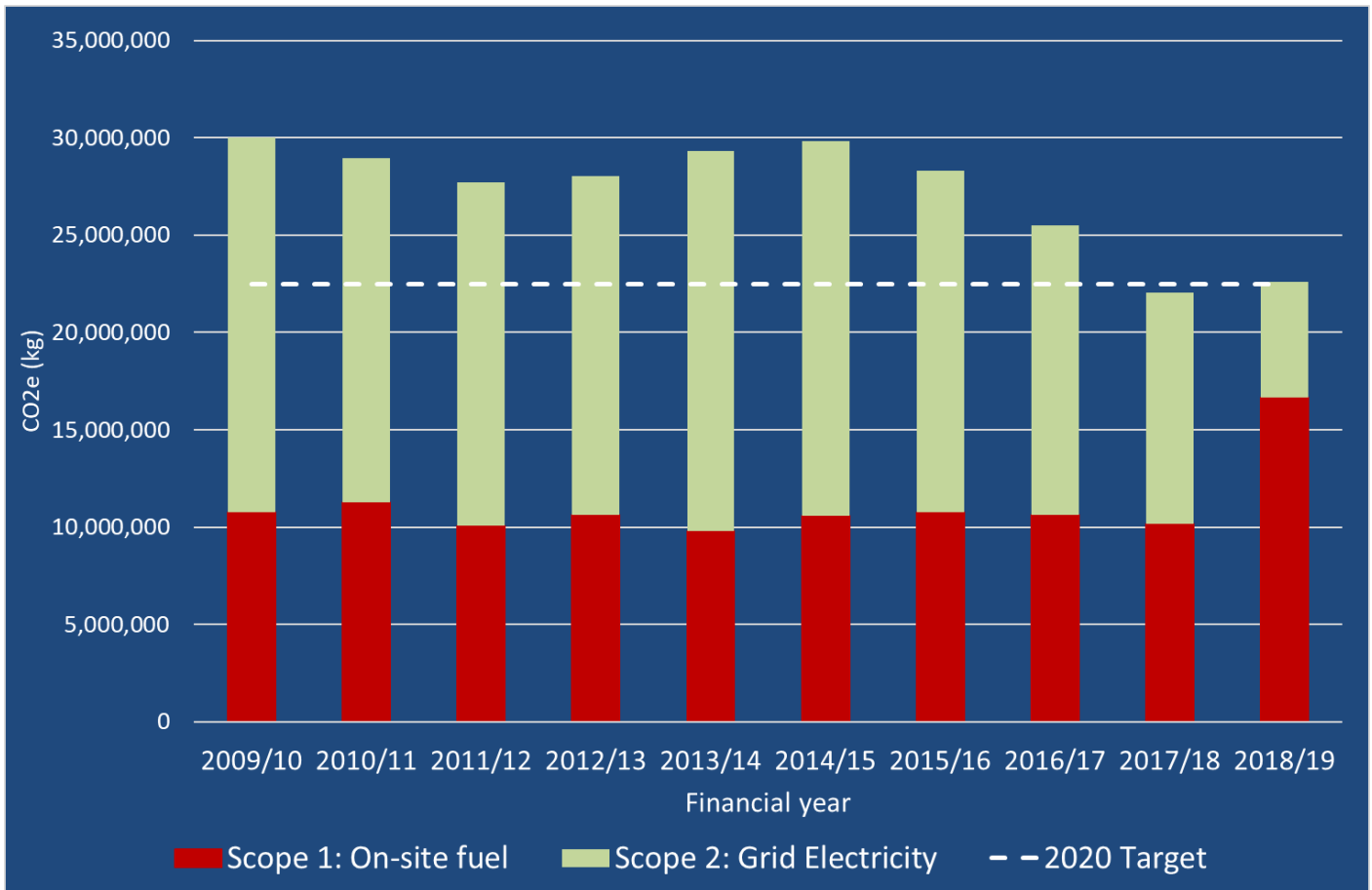


Figure 1 - Strategic Carbon Reduction Target

2.2 Factors Affecting Current and Future Performance

2.2.1 Current Performance

- There has been a continued downward trend in grid electricity emissions factors in 2018/19 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 2019/2020 from the continued operation of the district heating project and SALIX enabled energy efficiency projects.
- 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

With support from Scottish Government funding, in 2018 we completed the installation of a state-of-the-art combined heating and power system. CHP allows Strathclyde to generate up to 50% of its electricity on campus and use the resultant heat produced to heat campus buildings.

The project involved the installation of several kilometres of large-scale pipework and cabling, as well as the refurbishment of the John Street Energy Centre where heat and power are generated. As of December 2019, 18 buildings on our campus are connected to the scheme.

CHP will help the University create significant financial savings and reduce its carbon footprint. CHP also acts as a catalyst for a wider district energy scheme in Glasgow and is a vital part of the University's ongoing £1billion campus investment.

Staff and students are welcome to visit the Energy Centre to learn more about CHP by booking on to one of our organised tours.

4.0 Cost of Utilities and Water reduction

During 2018/19 there was a saving in utilities costs of £1,500,000. This was primarily due to the operation of the CHP and what is known as the “spark gap” – which is the difference in cost between gas and electricity. We also so rates reductions of 3% for electricity, 2% for gas and 14% for water.

5.0 Community Benefits – 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.

https://www.strath.ac.uk/media/ps/estatesmanagement/sustainability/SD_and_Climate_Change_Policy_Web_Version.pdf

This commitment includes taking the opportunity to include a range of community based benefits as a result of procurement activity. This will be achieved through the inclusion of specific clauses within procured contracts known as, the ‘Strathclyde Commitment’ clauses.

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 has been developed and can be found at <https://www.strath.ac.uk/sustainablestrathclyde/policyguidelines/>.

7.0 Waste Resource Management

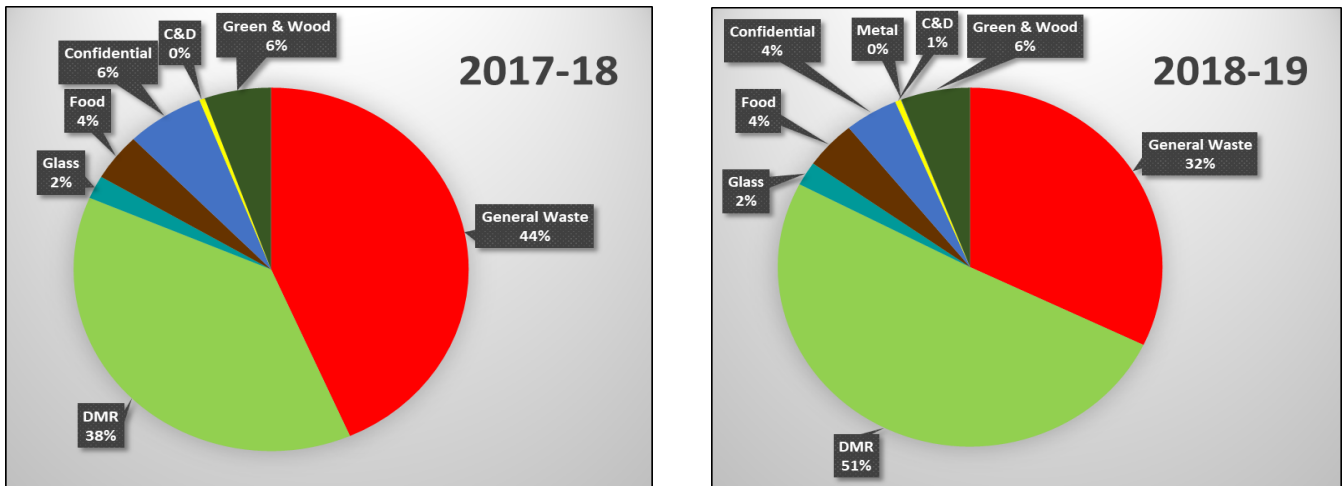


Figure 2 - Annual Waste Composition Comparison

The University has made significant progress in improving waste segregation and recycling across campus. There has been a 25% reduction in general waste arisings and a 34% increase in Dry Mixed Recycling streams compared to 2017/18.

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

The University's Reuse, Recycling & Resource Centre (RRREC) at Corn Street has been harnessed throughout the academic year to ensure furniture and materials are reused around the university estate, ensuring waste is minimised and items are kept in useful working life for longer.

7.2 Plastic Waste Reduction

The University has adopted a target to remove single use plastics from catering outlets by the end of 2020. Vegware and compostable catering supplies have been introduced in 2018/19 to phase out the use of non-compostables, and initiatives around keep-cups continue to be implemented.

A collaborative project with staff in the Robertson Wing and the University Waste management Contractor has seen a number of disposable plastic items identified and diverted from the laboratory general waste stream and accepted into the Dry Mixed Recycling collection. This will significantly reduce the general and clinical waste arisings from the laboratories going forward.

8.0 Staff, Student and Wider Stakeholder Engagement

During the 2018/19 academic session, engagement activities continued to see staff and students getting involved on wider levels. The main engagement campaigns centered around Fairtrade Fortnight which involved social media

engagement raffles and deals on ethically sourced food, Go Green Week which involved the collaborative running of that annual Glasgow Goes Green Festival (with the University of Glasgow, Glasgow School of Art, Glasgow Caledonian University), the Strathclyde Community Garden which facilitated the involvement of staff in gardening activities from across the university and the “Student Switch Off” which achieved a 17% reduction of energy and saved 22 tonnes of CO₂. The “Jump” engagement and behavioural reward programme was rolled out this year to 282 staff in 39 teams across Strathclyde and, through the actions that they recorded, 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.

8.1 Student Focused Activities

Over the academic year, there have been three major student-focused initiatives. Each year the University of Strathclyde teams up with the University of Glasgow, Caledonian University and The Glasgow School of Art to run the Glasgow Goes Green Festival. In the 2019 installment which took place at the Glasgow School of Art, over 1,000 people attended a day of stalls, workshops, performances and engagement activities all themed around sustainability and the environment. Following the festival, the Sustainable Strathclyde team produced a video following the day which has been widely circulated amongst all stakeholder organisations. Also, 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. Through bi-weekly meetings the students work with Sustainable Strathclyde and collaboratively set up a series of events throughout the year ranging from Fairtrade bake sales, food waste workshops and participated in the Glasgow Goes Green Festival.

Through the Environmental Entrepreneurship MSc programme, one student delivered a business growth plan to Sustainable Strathclyde for their course project which detailed the community garden and how to develop it going forwards for future years. This work allowed us to establish new raised beds, new growing plans, create crop cycles and engage a local community group from Townhead in the work done on the site.

8.2 Sustainable Labs (S Labs)

S-Labs is a national environmental accreditation programme that aims to make labs safer, successful and sustainable.

Over the past year the sustainable labs programme has grown to encompass eight additional new teams from across three different departments; Civil and Environmental Engineering (CEE), 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 continues to provide new energy and water-efficient equipment in exchange of old ones. In the last year, 40 waterless condensers have been bought, bringing the overall total of waterless condensers financed through the S-labs initiative fund to 110 with a resultant water saving of £3900 per annum.

Furthermore, five water rotary evaporators and seven drying ovens have been bought through the incentive fund, the water and energy savings are still to be calculated.

Last year our novel S-labs accredited PhD Course took place successfully. The course consisted of a lecture in which the students were introduced to the importance of working sustainably within the lab and were taken through the S-labs programme, this was followed by a workshop where students monitored the energy consumption of different equipment within their lab and participated in completing the S-labs framework. Students were invited to the annual S-lab awards ceremony where they won awards for their individual or team effort. For 2020, 16 students have signed up for the course.

The PhD credit course was shortlisted for the International S-lab awards 2019 and was highly commended.

8.3 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.

9.0 Sustainable Transport

9.1 Cycling Infrastructure and Initiatives

Our cycle parking capacity has more than doubled since 2015 from 311 spaces to 636 parking spaces in 2018/2019 and a number of initiatives have been launched to support the use of this improved infrastructure, particularly the indoor cycle hubs.

9.1.1 Cycling Scotland Internship

The University secured funding from Cycling Scotland for a Campus Cycling Officer Intern, Rona MacNicol, as well as Smarter Choices Smarter Places funding for Rona to continue on as an Active Travel Coordinator. This provided a member of the team who could 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;
- Social Walking Group
- “Do It Yourself” bike maintenance sessions;
- Promotion of Active travel to staff and students
- Bike Security Tagging

- Lock Swaps

9.1.2 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 and is working towards achieving the award. PNDC have improved their changing facilities, and AFRC have re-organised their allocation of lockers to staff.

Estates services increased the number of cycle parking spaces available in their building



Image 1 - Cycle Friendly Campus Award Ceremony

9.1.3 Future Initiatives - Cycle Friendly Campus

The University achieved 'Cycle Friendly Campus 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.

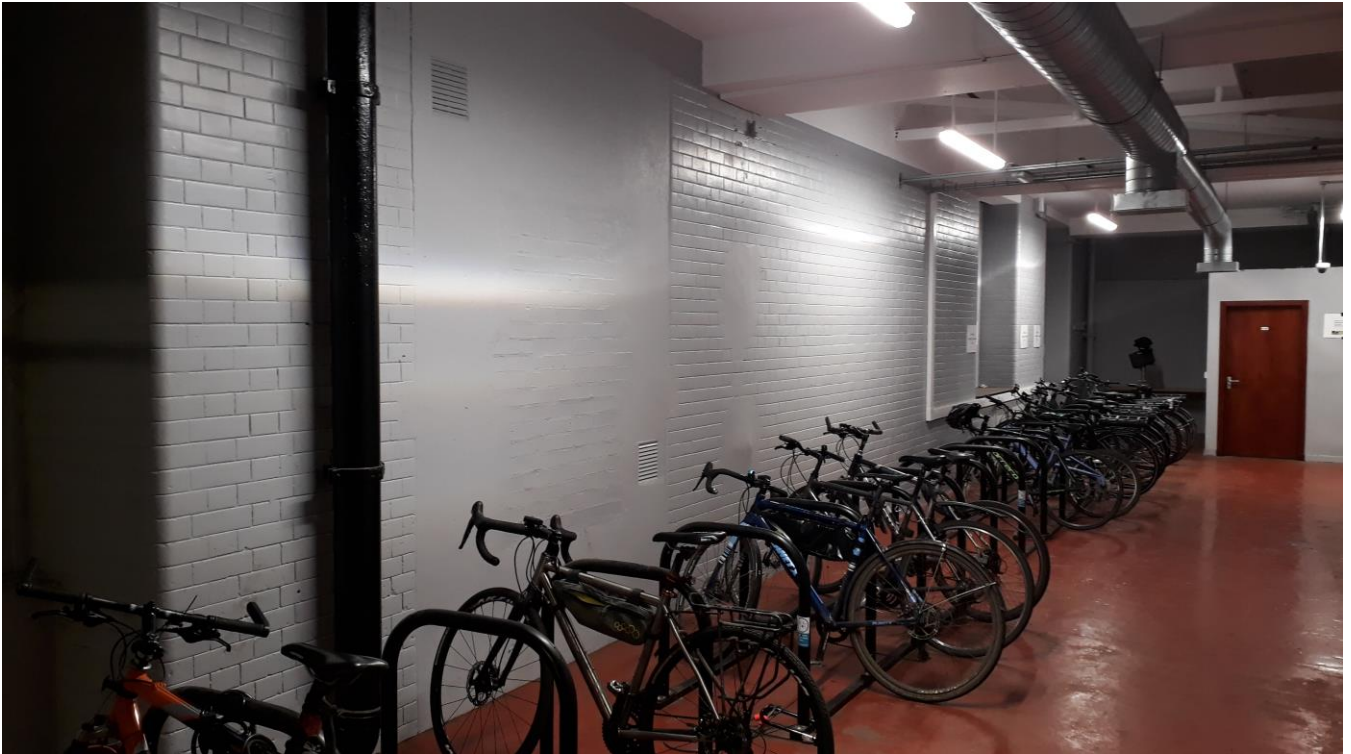


Image 2 - Cartway Cycle Hub

9.2 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 vehicles at AFRC, PNDC and Estates have been in use as department pool cars. The vehicles based at Richmond street were officially launched as Staff pool cars in November 2018. The vehicles drove 30,000 km in 2018/19 resulting in an estimated carbon saving of 4 Tonnes CO₂e.

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 were fitted with Co-wheels telematics systems and formally launched to all staff in November 2018. An induction training session was developed to enable a smooth transition for staff from driving manual transmission, internal combustion vehicles to automatic transmission, electric vehicles, and has been delivered throughout the year. From their launch in November 2018 to July 2019, 118 members of staff attended training sessions and the vehicles were booked 138 times driving approximately 4380 miles.

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.



Image 3 - Some of our new fleet of EVs outside TIC.

10.0 Ecology and Biodiversity

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

11.0 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 Association and Catering teams is now working on the

creation of a joint set of Fairtrade Policy statements. Through this group, guidelines on sustainable and fairtrade procurement are discussed and have now been implemented across the university. For this to work external partnerships with suppliers are crucial and the university has engaged regularly with Matthew Aglie who supply a large proportion of the coffee beans that are used on campus. Through working towards the National Union of Students' Fairtrade Accreditation, a SMART Action Plan has been created and will be published in 2020 (now published).

12.0 Awards and Achievements

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

- Green Business Tourism Scheme Gold Award for the Conference and Events Team at TIC
- Cycle Friendly Campus Award for the John Anderson Campus
- Cycle Friendly Employer award for AFRC and PNDC.
- Scottish Funding Council University Carbon Reduction Fund awarded £852,528 for CHP enhancement works.
- Sustrans Community Links Fund (now Places for Everyone) awarded £50,000 grant funding, joint with the City of Glasgow College for Design Fees for Urban Realm surface access improvement works.
- Cycling Scotland also awarded the university grant funding to improve facilities on the John Anderson campus and fund the salary of a Campus Cycling Officer internship for a second time.


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	<ul style="list-style-type: none"> Local staff level at 65%. Utilisation of local sub-contractors and staff. 	Complete
2.	Employ 4 direct apprentices and 10 sub-contractor apprentices	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 3 Engineering placements worked over Summer 2018 	Complete
4.	Offer 4 undergraduate/graduate internships	<ul style="list-style-type: none"> 7 undergraduate/graduates have worked on the project 	Complete
5.	Engage with local primary school	 <ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> VE sponsored the University Climate Change Adaptation event on 21st September 2017 	Complete

7.	Utilise SMEs for local businesses	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • The Fraser of Allander Institute has completed their SEIA Report 	Complete
9.	65% target for local spend on project	<ul style="list-style-type: none"> • Local spend final figure of 71% 	Complete

Appendix 2

Stakeholder Engagement Activities

Events and Networking 2018 - 2019

Name	Date	No. of people engaged
European Week for Waste Reduction 2018	November 2018	200-300, predominantly students
Go Green Week 2019	11th February 2019	>1,000 mainly students on the day and through social media
Fairtrade Fortnight 2019	25th February-10th March 2019	~300, mainly students
Sustainable Strathclyde Awards 2019	May 2019	Attended by 40-50 staff
Strathclyde Fresher's Week 2018	September 2018	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 2018/2019

Name	Date	No. of people engaged
Green Impact/ Sustainable Laboratories	2018/2019	80+
Student Switch Off	2018/2019	Potential reach of 1500 students every year
JUMP	2018/19	Currently 200+ staff and growing
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.