EAUC-Scotland
Public Bodies Climate Change Duties Overview Report

2018 Further and Higher Education Submissions Analysis & Recommendations

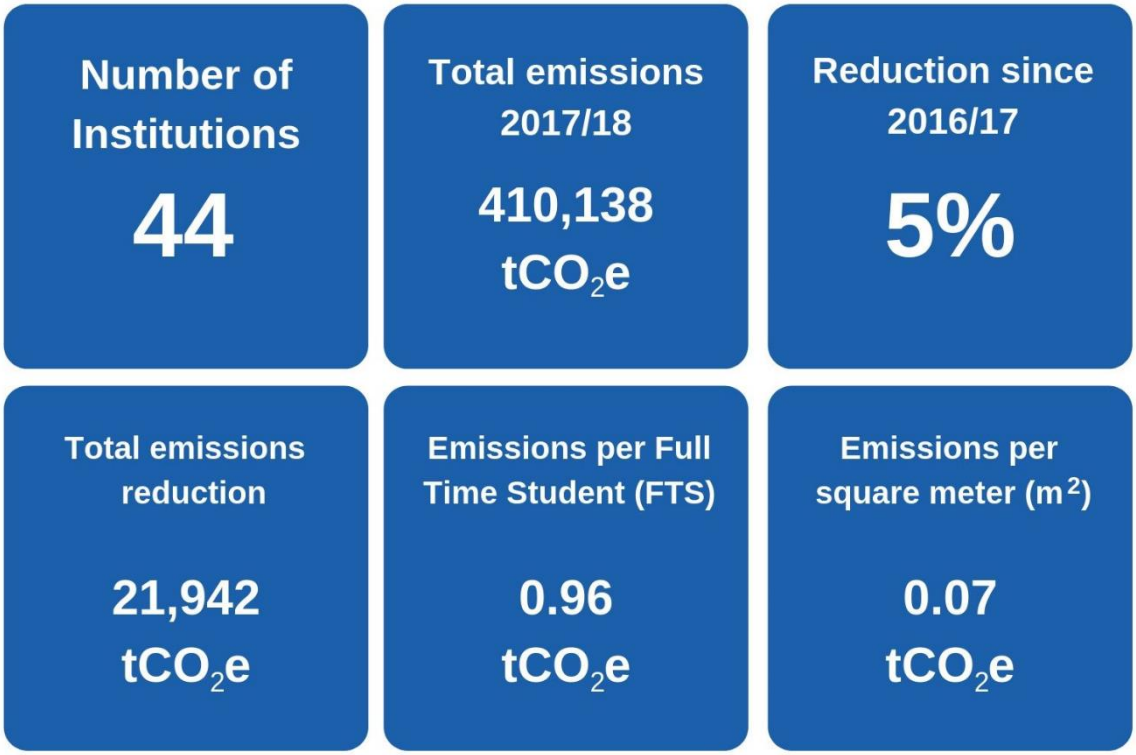
May 2019

Contents

Executive Summary

Total Greenhouse Gas (GHG) emissions for the Further and Higher Education (FHE) sector reported during 2017/18 were 410,138 tonnes of carbon dioxide equivalent (CO_2e). The sector has reduced its absolute emissions by 21,942 tonnes of CO_2e since 2016/17 which is 5% of total emissions. This is consistent with the public sector as a whole, which reported total GHG emissions of 2,882,788 tonnes of CO_2e and a 5% reduction since 2016/17.

Figure 1. Key figures for 2017/18



For the first time indicative performance metrics have been developed for the sector to facilitate meaningful comparison between reporting periods. Average emissions per Full Time Student (FTS) were 0.96 tonnes of CO_2e and average emissions per square meter were 0.07 tonnes of CO_2e.

Introduction

The Public Bodies Climate Change Duties (PBCCD) Reports from all 19 Universities and 25 Colleges in Scotland required to comply with Reporting Duties were submitted for the third mandatory year on 30 November 2018. The data submitted predominantly covered the academic year 2017/18 for these 44 Scottish Further and Higher Education (FHE) institutions. There are 180 Public Bodies in total so the FHE sector represents 24% of reporting organisations. This analysis report for the Scottish Funding Council will summarise the data collected and provide comparisons between reporting periods for all seven sections of the PBCCD reports.

After reaching its carbon reduction target six years early (with a 42% carbon emissions cut by 2014 from a 1990 baseline), the Scottish Government introduced a new Climate Change Bill in 2018 to set more ambitious targets, which includes amending the 2020 target to 56% and the 2050 target to 90%[1]. Universities and Colleges have seen carbon mitigation and adaption rise up their agenda as well, with EAUC-Scotland continuing to support the sector to improve their reports for the annual submission. Partnership with Sustainable Scotland Network (SSN) and other sector partners has helped us deliver training, updated guidance and one-to-one support to make sure that every institution was able to submit their report in November 2018. Support has included:

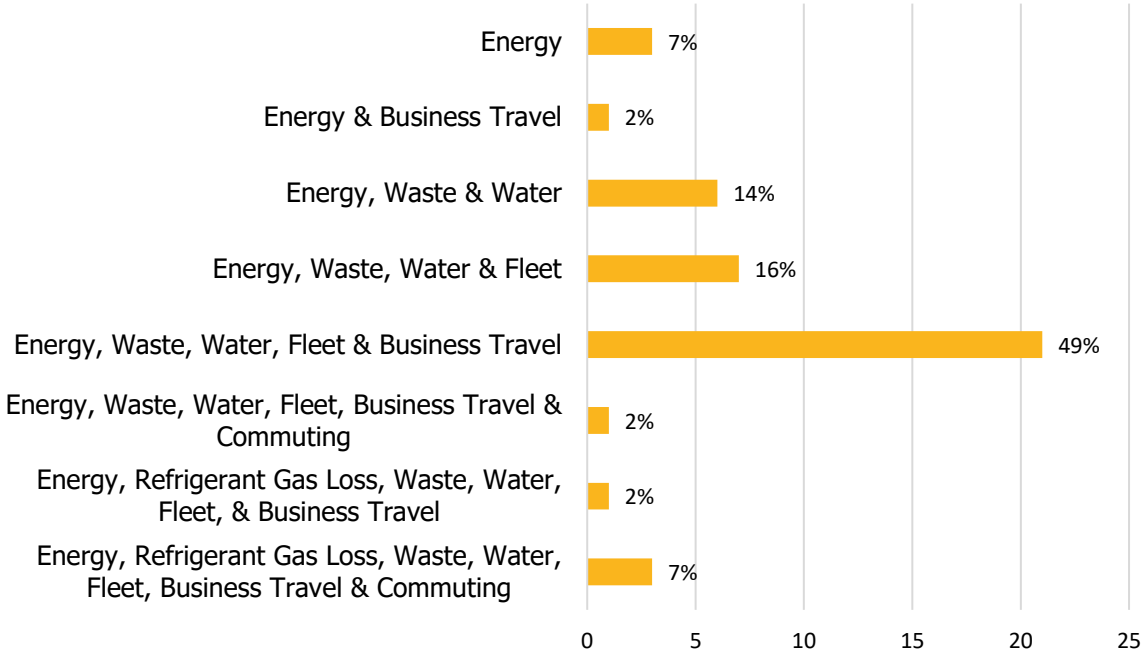
- SSN attendance at EAUC-Scotland Forum to answer questions
- Smaller Institutions Sustainability Meeting session to peer review data
- Institutional Visit Programme and Sustainability Committees Enhancement Project including discussions around reporting responsibilities
- Established Responsible Universities Group Scotland (RUGS) in collaboration with Universities Scotland and the Scottish Funding Council to push university performance on mitigating and reporting on sustainability impacts
- Leading Climate Change Adaptation Project which uses a risk approach to engage senior and planning teams with climate change adaptation

[1] Please note that these targets are likely to increase further with recent discussions about net zero emissions by 2045.

Reporting Quality

The quality of the reports has generally improved again this year and SSN reported that fewer quality assurance checks were needed. However, as illustrated in Figure 2, there is a significant variation in operational reporting boundaries. Only 7% of institutions report a complete set of emissions (premises energy consumption, refrigerant gas loss, waste, water, fleet, business travel and commuting) which means that all emissions are not currently accounted for and it is difficult to draw meaningful comparison between institutions.

Figure 2. Breakdown of Operational Reporting Boundary by Institution



Action: EAUC-Scotland will continue to work with institutions to improve the quality of reporting and, where possible, align operational reporting boundaries. In May 2019 we published the research report Aligning Operational Reporting Boundaries in FHE Sector GHG Reporting, and are planning virtual training to support institutions who would like to improve their reporting.

Analysis & Recommendations

Section 1: Profile of the reporting body

The profile data for each of the institutions has again been filled out more thoroughly this year. In line with previous reports 35 institutions reported data for the Academic Year 2017/18, 8 institutions reported data for the Financial Year 2017/18 and 1 institution reported data for the Calendar Year 2017/18.

Institutions have continued to report multiple performance metrics: 32% reported floor area (m^2), 18% reported full-time students (FTS) and 36% reported both. In future submissions EAUC-Scotland would encourage all institutions to report both FTS and floor area.

For the first time this data has been used to produce performance metrics for the sector[2]. As shown in Table 1, average sector emissions during 2017/18 were 0.07 tonnes of CO_2e per m^2 and 0.96 tonnes of CO_2e per FTS, although this hides a large disparity between colleges and universities, as well as between individual institutions. These performance metrics will allow institutions to monitor relative progress between reporting periods (where there have been material changes within the institution) and facilitate meaningful comparison between similar institutions.

Table 1. Performance metrics for 2017/18

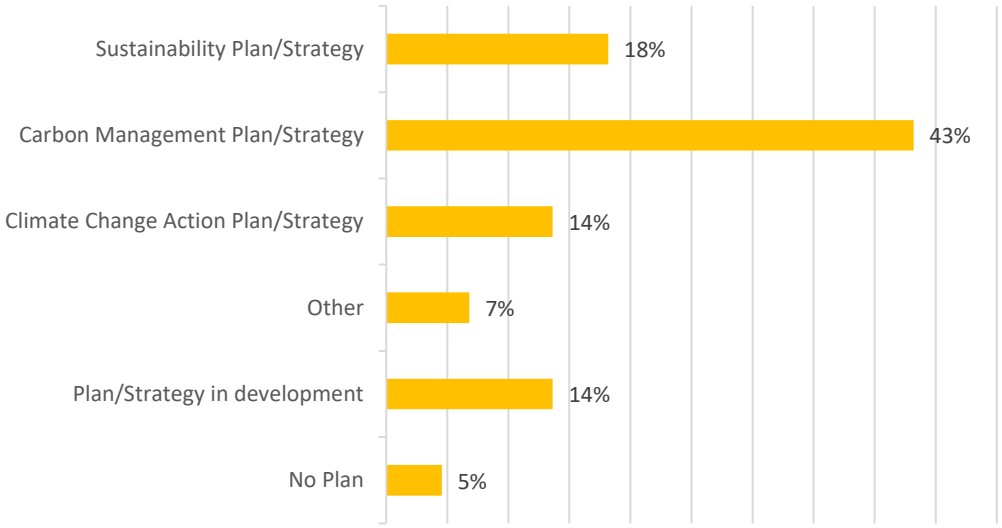
Performance Metrics	Average tCO_2e/m^2	Average tCO_2e/FTS
Universities	0.08	1.60
Colleges	0.06	0.57
FHE sector	**0.07**	**0.96**

[2] Please note that these figures should be treated as indicative as not all institutions provided metrics data and because the operational reporting boundary is not standardised.

Section 2: Governance, management & strategy

The number of institutions with official documentation relating to climate change rose to 82% in 2017/18, up from 68% in 2016/17. As illustrated in Figure 3 this included Carbon Management Plans, Climate Change Action Plans and Sustainability Strategies. A further 14% of institutions are currently in the process of developing or updating their documentation so we can expect this figure to increase in the next reporting period.

Figure 3. FHE Institutions with Climate Change related documents in 2017/18



As illustrated in Table 2, the top five priorities for the FHE sector in 2017/18 are similar to those reported in 2016/17. Estates continues to dominate, with 36 institutions citing it as a top priority for the forthcoming year. Strategy & Governance was the next most common priority with 29 institutions listing it in their top five.

Table 2: Top five priorities for the following year

Priority	2015/16	2016/17	2017/18
Estates	41	32	36
Engagement	26	25	17
Curriculum	11	10	8
Adaptation	10	10	9
Strategy & Governance	-	23	29
Procurement	-	-	6
SDGs	-	-	3

Section 3: Sector emissions, projects & targets

3.1 Sector Emissions

Total Greenhouse Gas (GHG) emissions for the FHE sector 2017/18 were 410,138 tonnes of CO_2e. The majority of emissions arose from natural gas consumption which contributed 156,464 tonnes of CO_2e or 38% of total emissions, followed by electricity consumption which accounted for 126,098 tCO_2e or 31%. Business travel contributed 82,661 tonnes of CO_2e or 20% of total emissions and commuting contributed 27,279 tonnes of CO_2e or 7% of total emissions[3]. A full breakdown of emissions sources can be seen in Table 3.

Table 3: Total Sector emissions 2017/18

Source of emissions	2017/18 (tCO_2e)	Percentage of total
Electricity	126,098	31%
Natural gas	156,464	38%
Other heating fuel	4,010	1%
Refrigerants	1,022	0.2%
Waste	2,674	1%
Water and sewerage	3,018	1%
Business travel	82,661	20%
Transport fuel	1,594	0.4%
Commuting	27,279	7%
Procurement[4]	5,000	1%
Renewables	214	0.1%
Other	103	0.03%
Total	**410,138**	**100%**

Between 2016/17 and 2017/18 the sector achieved a reduction of 21,942 tonnes of CO_2e or 5% of total emissions. A breakdown of the percentage change in emissions for each source is shown in Table 4. The largest reduction arose from electricity, however it should be noted that 19% of this reduction is as a result of the decarbonisation of UK grid electricity[5] so only 3% can be attributed to efficiency and behavioural change measures made by institutions. The largest increase comes from commuting emissions which rose by 105%. This is due to a greater number of institutions expanding their operational reporting boundary to include commuting. The 2% increase in natural gas consumption is due to

[3] Please note that only 62% of institutions reported business travel & only 9% reported commuting
[4] Please note only 1 institution reported GHG emissions from procurement
[5] The DEFRA conversion factor for UK grid electricity has reduced by 19% between 2017 and 2018

2017/18 being cooler than 2016/17 and therefore there was a higher demand for heating. In fact there was a 5.8% increase in Heating Degree Days (HDD) between the two reporting periods so without this external factor we would have seen a reduction in emissions of 3.8%.

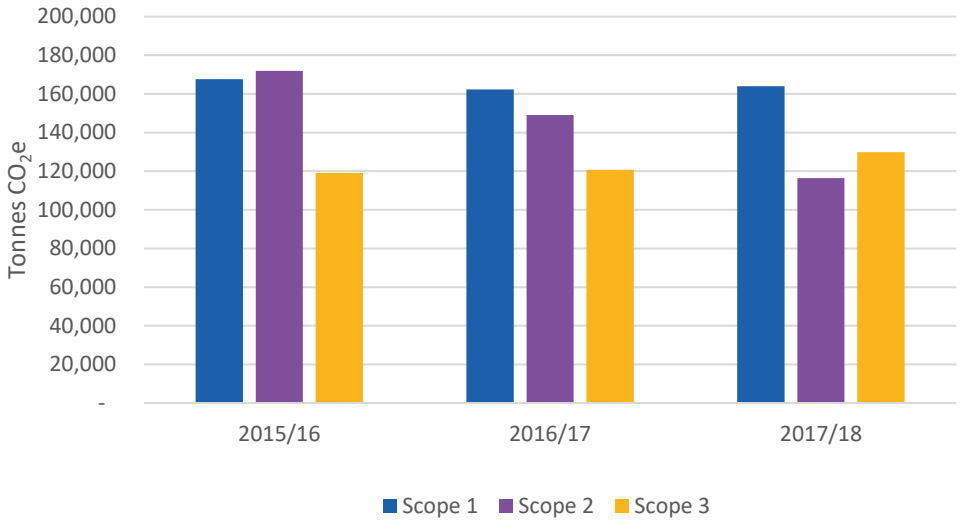
Table 4: Comparison of emissions between reporting periods

Source of emissions	2015/16 (tCO_2e)	2016/17 (tCO_2e)	2017/18 (tCO_2e)	% Change 2016/17-2017/18
Electricity	187,033	162,582	126,098	-22%
Natural gas	159,067	153,610	156,464	2%
Other heating fuel	4,531	3,105	4,010	29%
Refrigerants	612	1,124	1,022	-9%
Waste	3,804	2,949	2,674	-9%
Water and sewerage	3,032	3,080	3,018	-2%
Business travel	79,041	83,355	82,661	-1%
Transport fuel	2,800	1,771	1,594	-10%
Commuting	13,283	13,284	27,279	105%
Procurement[6]	5,000	5,000	5,000	0%
Renewables	148	202	214	6%
Other	283	2,017	103	-95%
Total	**458,632**	**432,079**	**410,138**	**-5%**

Total emissions broken down by scope is shown in Figure 4. This shows that Scope 1 emissions have remained fairly constant between reporting periods, there has been significant reductions of Scope 2 emissions and Scope 3 emissions have increased over time (see Table 5 for description of each scope).

[6] Please note only 1 institution reported GHG emissions from procurement

Figure 4. Comparisons of emissions breakdown by scope between reporting periods



As discussed above a significant portion of the Scope 2 emissions reduction should be attributed to the decarbonisation of the UK electricity grid and the increase in Scope 3 emissions is primarily due to institutions expanding the operational boundary of their reporting.

Table 5: Definition of Reporting Scopes

Scope 1	Direct GHG emissions which the institution has control over, such as building fuel consumption and owned vehicles
Scope 2	Indirect GHG emissions from the generation of purchased electricity, steam, heating and cooling consumed by the institution
Scope 3	Indirect GHG emissions which are a consequence of the activities of the institution, but which they do not directly control, such as sending waste to landfill and business travel

3.2 Projects

The FHE sector have done well again reporting on projects. 17,458 tCO_2e have been saved in the 2017/18 reporting year. As can be seen in Table 6 this is lower than last year. This reflects the fact that many quick gains have already been achieved and it is now harder for institutions to reduce their GHG emissions. However it should be noted that 17 FHE institutions did not submit data to estimate their project savings in the reporting year, therefore some work could still to be done to identify and measure the value of projects that contribute to GHG emissions reductions.

Table 6. Comparison of savings by project type between reporting periods

Project type	2015/16 (tCO_2e)	2016/17 (tCO_2e)	2017/18 (tCO_2e)
Electricity	19,477	17,580	10,163
Natural gas	4324	6,192	3,456
Other heating fuels	32	259	41
Waste	372	301	176
Water and sewerage	66	19	103
Business Travel	14	166	312
Fleet transport	30	45	100
Other	-	49	3,106
Total	**24,315**	**24,611**	**17,458**

Electricity remains the most commonly reported emissions type being addressed with GHG emissions reduction projects; many institutions have been making improvements with lighting upgrades through a variety of funding sources as it is a relatively 'quick win'. The universities appear to be able to mobilise projects easier than the colleges, which may be due to access to funding. However funding through the Scottish Funding Council for College Maintenance, as well as the College Energy Efficiency Pathfinder (CEEP) project have also been reported through the PBBCD Reporting (see Appendix III).

As it is a Scottish Government priority to focus on renewables[7], we have broken down the data on projects relating to renewables in Table 7. Similar statistics to last year show that there is a slight decrease in renewables projects instigated within the 2017/18 reporting year, but with institutions still favoring Solar PV and Biomass. Water Source Heat Pumps have seen a rise from last year.

[7] 2020 Route Map for Renewable Energy in Scotland

Table 7: Breakdown of renewable energy projects by type

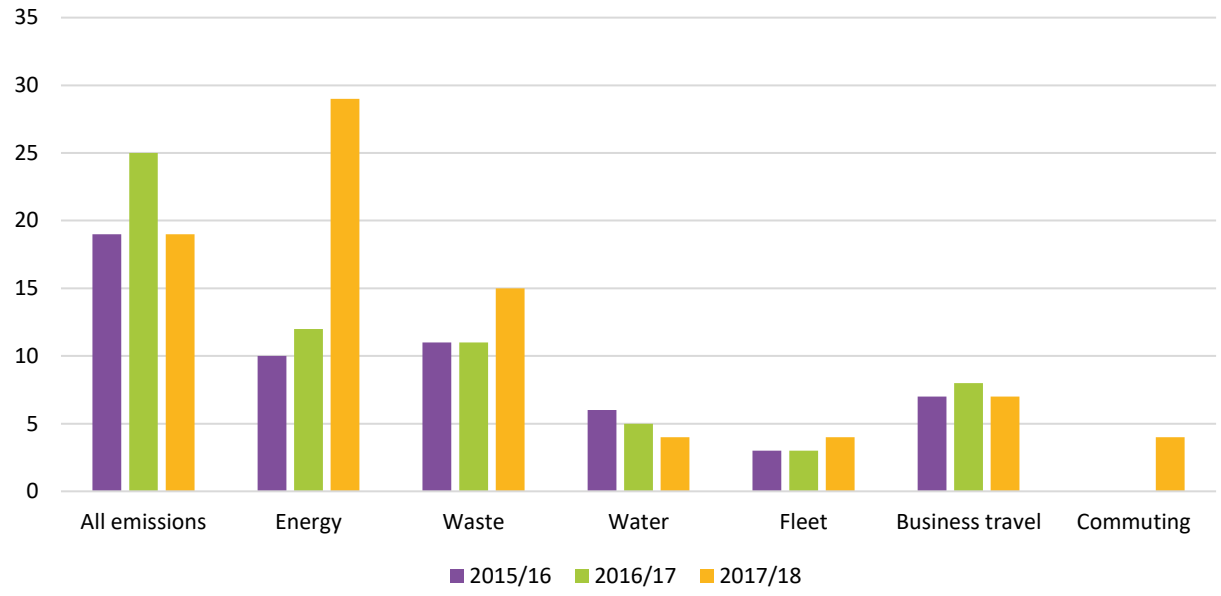
Technology type	Number of projects 2015/16	2016/17	2017/18
Solar PV	22	21	21
Biomass	10	12	10
Solar thermal	6	6	5
Ground Source Heat Pump	6	7	6
Wind	2	0	0
Biogas CHP	1	0	0
Air Source Heat Pump	1	3	3
Water Source Heat Pump	0	2	5
Total	**49**	**52**	**50**

Action: EAUC-Scotland will continue to encourage institutions to keep project registers up-to-date to allow for quick responses when funding becomes available, as a lack of time to scope projects is often cited as a reason why institutions don't apply when funding opportunities arise.

3.3 Targets

Targets were reported by 33 institutions in 2017/18, with multiple targets from some institutions resulting in 82 individual targets which is 28% more than in 2016/17. Feedback from SSN on targets has been that for the whole public sector it is a difficult section to evaluate, as there are multiple varying factors such as scope, boundaries, units used and reporting time, all of which impact on reporting consistency. Most FHE institutions report targets on the academic year but, as with the overall reports, there are 3 institutions who report targets on the financial year.

Figure 5: Comparison of targets between reporting periods



Action: EAUC-Scotland will continue to collaborate with SSN to support our members with setting more ambitious targets in line with the Climate Change Bill.

Section 4: Adaptation

The Adaptation section of the PBCCD reporting has seen an improvement in submissions from universities and colleges compared to previous reporting years, with 52% of institutions reporting that they have assessed current and future climate related risks and a further 20% planning to undertake a climate risk analysis in the coming year.

In general there is a better understanding of adaptation with fewer organisations erroneously citing mitigation activities and the range of adaptation projects has expanded. These included:

- Flood risk management (SUDS, Permeable Car Park Surfaces, Sedum Roofs);
- Resilience measures incorporated into development planning;
- Climate proofing existing buildings;
- Biodiversity Action Plans to promote and sustain local biodiversity systems; and
- Research (Agriculture & Food Systems, Behavioural Change).

Action: EAUC-Scotland will shortly be releasing a new guide and supporting resources on *Adapting universities and colleges to a changing climate: Making the case and taking action*, which supports a risk-based approach to adaptation, and the EAUC-Scotland Team are planning to run an adaptation themed event in partnership with Historic Environment Scotland in October 2019. EAUC-Scotland will also continue to work with Adaptation Scotland to support the sector with climate change adaptation, including offering training as required.

Section 5: Procurement

Continuing on from last year's reporting success, the Procurement section was completed thoroughly again in 2017/18. Compliance with the Procurement Reform (Scotland) Act 2014 is a main driver for the universities and colleges, often with procurement staff from APUC being situated within the institutions' internal procurement department. A Sustainable Procurement Policy or Strategy was cited by 77% of the institutions, and a further 18% mentioned the use of APUC's frameworks. Only 2 institutions provided no information on their procurement policies.

Action: EAUC-Scotland will continue to collaborate with APUC to investigate how we can support the sector further with sustainable procurement policies, practices and reporting.

Section 6: Validation

As with the previous year the most common type of validation was internal, with either high-level approval from internal bodies such as committees or individual managers. A limited numbers of institutions opted for external validation, with the majority explaining that the external validation was only in relation to waste as it was offered by their waste collector.

Ten institutions in EAUC-Scotland's Smaller Institutions Sustainability Group again undertook a peer-review workshop-based discussion during one of the group's meetings, prompted by questions provided by SSN and facilitated by EAUC-Scotland. For the first time this year a small group of education and research institutions in Aberdeen also conducted an informal peer review. These processes are given excellent feedback by attendees in providing useful insight to develop the quality of their reporting, both before submission and for the next reporting year.

Action: EAUC-Scotland will continue to provide the peer-evaluation style of validation workshop in preparation for the November 2019 deadline.

Wider Influence Section (Recommended)

The Wider Influence section of the reports has remained consistent in terms of submissions, with 59% of institutions submitting a response in 2017/18. This is an important area for universities and colleges to evidence the work that they are doing beyond GHG emissions reporting, and linking to their core business areas of education and engagement.

Partnership work was the most reported area, with 81 entries from the institutions who completed that area of the Wider Influence section. Other areas that were reported on included 'Food & Drink' and 'Resources Use', as well as 'Education'.

Action: EAUC-Scotland will be encouraging more institutions to report on their wider influence, and especially their educational activity related to climate change and sustainability, in next year's PBCCD Reports.

Summary & Conclusion

The third mandatory year of the Public Bodies Climate Change Duties Reporting has shown significant progression for universities and colleges with GHG and sustainability reporting. The 2017/18 submissions were a success, with all 44 Scottish Further and Higher Educational institutions submitting reports, and advances being seen within most of the reporting sections.

Feedback from SSN on the quantity and quality of the data submitted shows that institutions have improved their understanding of the reporting process.

A few headline points to note:

- There was a 5% absolute decrease in sector GHG emissions from 2016/17 to 2017/18
- The sector contributed 410,138 tCO_2e (14%) to the overall public sector GHG emissions of 2,882,788 tCO_2e
- The continuation of 'peer validation' workshops has resulted in higher quality reporting and will be expanded going forward to include more institutional groups
- EAUC-Scotland will focus on helping the sector to align their operational reporting boundaries in 2018/19
- Estates, Strategy & Governance, Engagement, Adaptation & Curriculum are the Top Priorities for institutions in 2017/18
- 26 of the 44 institutions completed the Wider Influence section of the reports

Section 3 on Corporate Emissions, Projects and Targets showed better quality of data being submitted, with less editing having to be done by SSN after completion. The absolute reduction in GHG emissions is positive but a significant portion of the decrease is attributed to the decarbonisation of the grid. Therefore, going forward, it is important that the sector continues focusing on energy efficiency and lowering the GHG emissions from business travel in order to meet the more ambitious targets set by the Scottish Government.

Governance and Leadership are an important area, with the SFC Outcome Agreement Guidance for 2018/19 (see Appendix I) specifying that institutions should be evidencing their Leadership in Environmental and Social Sustainability through their PBCCD Reports. More work will be undertaken by EAUC-Scotland through the next reporting year to support institutions' sustainability leaders, committees and sustainability groups to set out intentions and targets in policy and strategy documents.

The Wider Influence section continues to be positive, and it was helpful to have so many examples of good practice being submitted, allowing better insight into the wide variety of work going on. This area will continue to be supported by the EAUC-Scotland team, as it is one of the most important areas for universities and colleges, enabling them to demonstrate their impactful work in education and engagement.

Looking ahead, the reporting format will remain the same for the 2018/19 reporting year, and any changes going forward will be widely communicated with the sector by both EAUC-Scotland and SSN. The SFC Outcome Agreement Guidance for 2019/20 (see Appendix II) has been updated and now highlights the need for creative and innovative sustainability ambitions tailored to the unique strengths and context of each individual college or university. The guidance recognises that sustainability is not just for the estates team but a whole institutional issue, and should be embedded within everything from the strategic plan to individual module descriptors, HR policies, and procurement decision-making. Therefore, with this update to the guidance and the suite of support on offer from EAUC-Scotland, it is hoped that subsequent reporting years will see further improvements in completeness and quality throughout all sections of the reports.

Appendix I: SFC Outcome Agreement Guidance 2018/19

Leadership in Environmental and Social Sustainability

The Climate Change (Scotland) Act 2009 sets ambitious targets for carbon reduction in Scotland, and led to the requirement for Colleges / Universities to submit an annual Public Bodies Climate Change Duties (PBCCD) Report detailing their compliance. The Environmental Association for Universities and Colleges (EAUC) will support the development of effective emissions reduction action plans, and work with SFC through implementation of their own 2017-2020 Outcome Agreement to monitor continual individual and sector progress on both the quality of reporting and actions to address climate change impacts. Institutions are expected to complete both the 'Required' and 'Wider Influence' sections of PBCCD Reporting.

Building upon the Universities and Colleges Climate Commitment for Scotland, we expect all institutions to demonstrate leadership in addressing environmental and social sustainability challenges. Universities must outline climate change and sustainability ambitions and targets in their Outcome Agreements, and demonstrate action through implementation of a dedicated Sustainability Strategy, or the embedding of environmental and social sustainability ambitions within corporate Strategic Plans. Progress should be reported through PBCCD Reporting submissions and the Outcome Agreement process. With support available through the EAUC's programme, demonstrating leadership is expected to include senior-level strategic commitment, effective staff and student engagement, partnership working through internal and external networks, and meaningful progress on both climate change and wider environmental and social sustainability.

We expect leadership in environmental and social sustainability to strengthen the competitiveness of Scottish tertiary education, supporting SFC priorities by minimising financial and reputational risks, offering innovative opportunities for growth, assisting in attracting and retaining talented staff, enhancing the learner experience, and ensuring students develop the understanding of environmental and social sustainability required for the workplaces of tomorrow.

SFC University Outcome Agreement Guidance 2018/19 (pg 32)

SFC College Outcome Agreement Guidance 2018/19 (pg 32)

Appendix II: SFC Outcome Agreement Guidance 2019/20

Leadership in environmental and social sustainability

The Climate Change (Scotland) Act 2009 set ambitious targets for carbon reduction in Scotland, and led to the requirement for Colleges/Universities and other significant publicly funded organisations to submit a mandatory Public Bodies Climate Change Duties (PBCCD) Report on an annual basis. To capitalise on this activity, the climate change targets and sustainability ambitions for each college/university should also be outlined in their outcome agreement. Climate change targets should be framed within a current emissions reduction plan. SFC acknowledges that each college/university will be at a different stage in their environmental sustainability journey. This stage will have been determined by their access to resources and the opportunity, past and present, to engage in sustainability activity in order to build knowledge capacity. SFC expects that sustainability ambitions will be creative and innovative, capable of application within the college/university and able to deliver sustainable impact that is meaningful to each college or university and their wider communities.

In order to demonstrate leadership in promoting environmental sustainability, SFC expects each college and university to develop approaches and report activity that evidences their corporate commitment to tackling wider environmental and social sustainability challenges, both in mandatory reporting and as part of their own sustainability ambitions. These ambitions and targets should be detailed within wider strategic documents or through a dedicated sustainability strategy or action plan, and recorded in their Outcome Agreement (including providing links to relevant documentation), and should demonstrate either a whole-institutional approach or describe activity that is working towards a whole-institutional approach. SFC expects that evidence of progress against the strategy will be provided from a variety of operational activity such as approaches to governance in sustainability, climate change adaptation and mitigation activities, successful senior management engagement, curriculum links, estates decision-making, student/staff engagement, general wellbeing initiatives and meaningful community links or though other business areas, either in part or across all areas. Support will be available through the EAUC's programme, and progress should be reported through PBCCD Reporting submissions and the Outcome Agreement process.

SFC anticipates that the diversity that exists within each college and university in terms of population cohort and learning activity will provide opportunities to deliver the type of environmental and social sustainability leadership that is transformative in design and unique to each individual college or university and its wider community. Some of this wider community may include partnerships across other universities and colleges. This activity should also provide colleges and universities with the appropriate evidence to complete the recommended section on 'wider influence' in PBCCD reporting.

Potential longer term outcomes of note to SFC as a result of this activity will be to strengthen the competitiveness of the sectors, reduce financial and reputational risks, create innovative opportunities for growth, provide a better learner experience for both students and staff and ensure that students develop the understanding of environmental and social sustainability required for the workplaces of tomorrow.

SFC University Outcome Agreement Guidance 2019/20 (page 38)

SFC College Outcome Agreement Guidance 2019/20 (page 39)

Appendix III: Best practice case studies

SSN highlighted in the Pubic Bodies Climate Change Reporting 2017/18 – Analysis Report some of the case studies of best practice throughout the submitted individual reports. The following FHE sector case study was highlighted.

Spotlights 2017/18

- Borders College Pathfinder Project success – The College participated in the College Energy Efficiency Pathfinder Project (CEEP) – a Scottish Funding Council and Scottish Government initiative to support retrofit on College estates. The College reduced energy consumption across its estate by 19% and made financial savings of £33k per annum. Work completed under the CEEP project included: over 3,000 light fittings replaced with LED equivalents, improved and centralised control of heating time clocks and ventilation plant, and reduction of site voltage levels by 5%.

Prepared and delivered by