

EAUC-Scotland Public Bodies Climate Change Duties Overview Report

2020 Higher Education Submissions
Analysis & Recommendations

June 2021

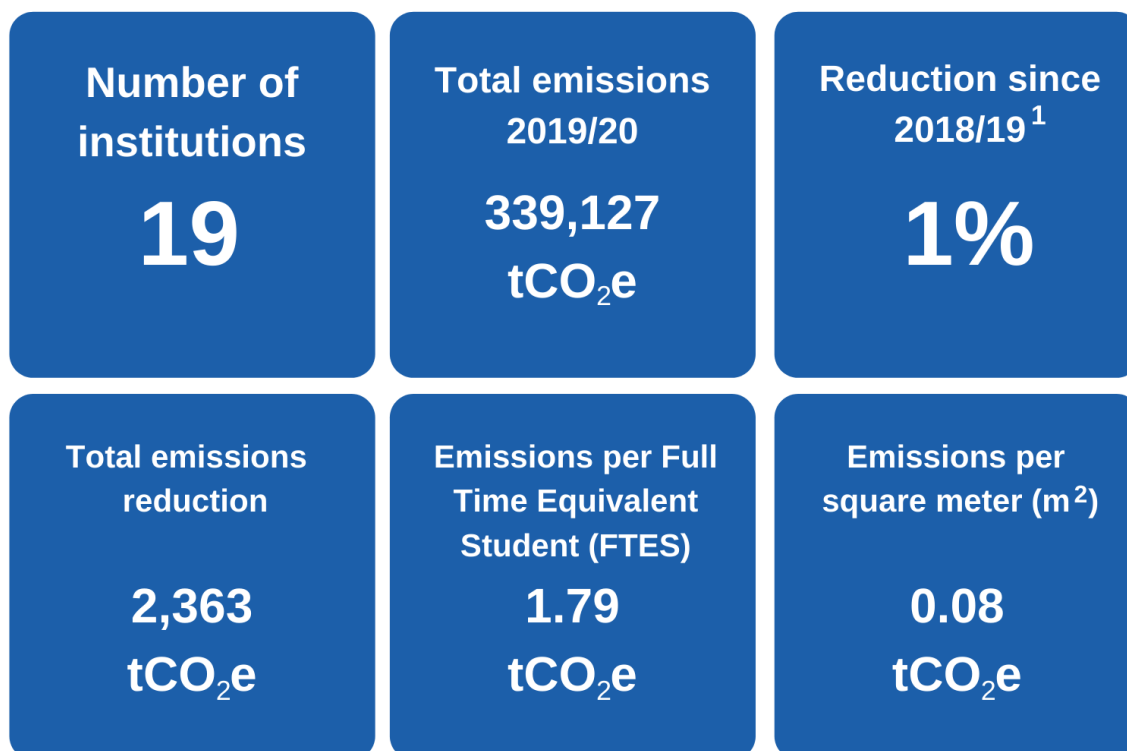
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Executive Summary

Total greenhouse gas (GHG) emissions for the Higher Education (HE) sector reported during 2019/20 were 339,127 tonnes of carbon dioxide equivalent (CO₂e). Total reported emissions have only reduced by 1% since 2018/19 due to a significant expansion of operational reporting boundaries, without this change HE sector emissions would have reduced by 17%. However, it should be noted that a significant portion of this reduction is due to the decarbonisation of the UK grid.

Figure 1. Key figures for 2019/20



Average emissions per Full Time Equivalent Student (FTES) were 1.79 tonnes of CO₂e and average emissions per square meter were 0.08 tonnes of CO₂e, an increase of 5% and 18% respectively since 2018/19 due to the aforementioned changes to reporting boundaries.

There has been an improvement in the quality of reporting this year and several institutions expanded their operational reporting boundaries to include key sources of emissions like international student travel, domestic student travel, supply chain and hotel stays.

¹ Please note that without the expansion of reporting boundaries sector emissions would have reduced by 17%.

Introduction

The Public Bodies Climate Change Duties (PBCCD) reports from 18 Scottish universities were submitted for the fifth mandatory year on 30 November 2020. Due to the pandemic, one institution missed the deadline this year but was subsequently able to provide EAUC-Scotland with the relevant data and it has been included in this analysis report².

The data submitted predominantly covered the academic year 2019/20, which included the first lockdown from March to June 2020. This analysis report will summarise the data and provide comparisons between reporting periods for section three of the PBCCD reports.

Scotland's world-leading climate change legislation set a target date for net zero emissions of all greenhouse gases (GHGs) by 2045. In 2020, the [Climate Change \(Duties of Public Bodies: Reporting Requirements\) \(Scotland\) Amendment Order 2020](#) set out that from 2022 public bodies will be required to annually report:

- Target date for achieving zero direct emissions of greenhouse gases;
- Targets for reducing indirect emissions of greenhouse gases; and
- How the body will align its spending plans and use of resources to contribute to reducing emissions and delivering its emissions reduction targets.

Universities have also seen carbon mitigation rise up their agenda and 8 Scottish universities have now signed the [UNFCCC Race to Zero](#). EAUC-Scotland has continued to offer support to the sector to improve reporting, this year it included:

- Virtual training sessions on improving GHG emissions reporting;
- Group and one-to-one peer review sessions;
- [Guidance on revising baselines](#);
- Responding to the Scottish Parliament [Call for Views on the Climate Change Plan Update](#);
- Supporting Responsible Universities Group Scotland (RUGS) and the [Travel Better Package](#);
- Engaging with the Universities Scotland VP Internationals Group on improving travel reporting; and
- Co-ordinating the [Higher Education Supply Chain Emissions Tool \(HESCET\)](#) update.

² Please note this institution was not included in the [Sustainable Scotland Network PBCCD 2019/20 Analysis Report](#) therefore the totals differ.

Reporting Quality

As illustrated in Table 1, there continues to be a wide range of different operational reporting boundaries across the HE sector. However, 100% of institutions are reporting the GHG emissions associated with premises energy consumption, waste & water, 74% are reporting business travel emissions and 74% are reporting fleet emissions.

Table 1. Percentage of institutions reporting each source of emissions

Emissions source	Number of institutions reporting	Percentage of total	Change since 2018/19
Energy	19	100%	-
Waste	19	100%	-
Water	19	100%	-
Business travel	14	74%	↓
Fleet	14	74%	-
Commuting	5	26%	↓
F-gas	6	32%	↑
International student travel	2	11%	↑
Domestic student travel	1	5%	↑
Supply chain	1	5%	↑
Total	19	-	-

The quality of the reports has improved again this year and SSN reported that fewer quality assurance checks were needed. Following feedback from EAUC-Scotland many institutions have expanded their operational reporting boundaries this year:

- Three institutions added f-gas;
- Two institutions added hotel stays;
- One institution added international student travel;
- One institution added domestic student travel; and
- One institution added supply chain.

Due to the pandemic some institutions were not able to include all the sources of GHG emissions that they had previously reported:

- Two institutions omitted business travel; and
- One institution omitted commuting.

These omissions were generally from smaller institutions and therefore should not make a material impact on the totals. However, student travel and supply chain are very significant additions and represent 16% of the reported total.

Action: EAUC-Scotland will continue to work with institutions to improve the quality of reporting and, where possible, align operational reporting boundaries. The EAUC-Scotland Team will also support the [Climate Commission for UK Higher & Further Education](#) on work to improve sector GHG accounting methodologies and set minimum operational reporting boundaries.

Case study: University of St Andrews

The University of St Andrews has committed to be net zero by 2035 in its [Environmental Sustainability Strategy](#) and it is the first institution in the UK to include supply chain and international student travel emissions in its target. The university's Environmental Sustainability Board has set up working groups to look at:

- Students in the Community;
- Research;
- Sustainability in the Curriculum;
- Energy, Estates & Environment; and
- Operational Adaptation.

They have split emissions into four key streams (energy & estates, travel, construction & procurement) and will identify opportunities and challenges to deliver emissions reduction projects in each work stream. For residual emissions that cannot be reduced the university has launched the [St Andrews Forest](#), which will include tree planting and peatland restoration.



Analysis

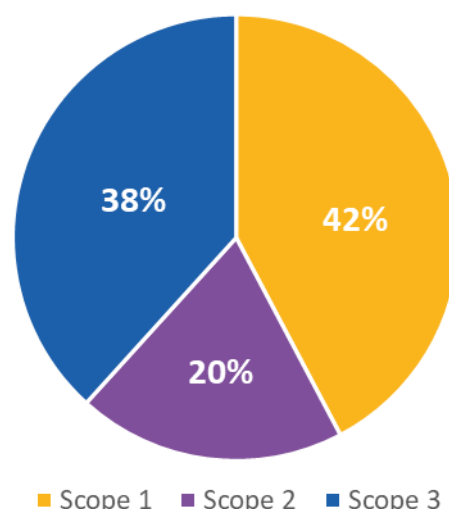
Total reported GHG emissions from the HE sector in 2019/20 were 339,127 tonnes of CO₂e. The majority arose from natural gas consumption which contributed 138,356 tonnes of CO₂e or 41% of total emissions, followed by grid electricity consumption which accounted for 64,224 tCO₂e or 19% of total emissions. Business travel contributed 35,832 tonnes of CO₂e or 11% of total emissions and supply chain contributed 35,000 tonnes of CO₂e or 10% of total emissions. A full breakdown of emissions can be seen in Table 2.

Table 2: Total HE sector emissions 2019/20

Emissions source	2019/20 (tCO ₂ e)	Percentage
Scope 1		
Natural gas	138,356	41%
Biomass	817	0.2%
Gas oil	1,148	0.3%
Other fuels	928	0.3%
Fleet vehicles	883	0.3%
F-gases	1,197	0.4%
Subtotal	143,328	42%
Scope 2		
Grid electricity	64,224	19%
Purchased heat	1,775	0.5%
Subtotal	65,999	19%
Scope 3		
Electricity transmission & distribution	5,521	2%
Heat transmission & distribution	93	0.03%
Waste	1,791	1%
Water	2,347	1%
Business travel - car	1,076	0.3%
Business travel - rail	743	0.2%
Business travel - taxi	132	0.04%
Business travel - bus	107	0.03%
Business travel - ferry	30	0.01%
Business travel - air	33,385	10%
Business travel - hotel stays	360	0.1%
Staff commuting	13,645	4%
Student commuting	9,209	3%
International student travel	25,982	8%
Domestic student travel	380	0.1%
Supply chain	35,000	10%
Subtotal	129,800	38%
Total	339,127	100%

As shown in Figure 2, in the reporting period 2019/20 Scope 1 sources account for 42% of total emissions, Scope 2 sources account of 20% of the total and Scope 3 sources account for the remaining 38%³.

Figure 2: Breakdown of emissions by scope



Between 2018/19 and 2019/20 the HE sector achieved a reduction of 2,363 tonnes of CO₂e, or 1% of total emissions. A breakdown of the percentage change in emissions for each source is shown in Table 3. The categories are slightly different from Table 2 as historic data is only available in this format.

Table 3: Comparison of emissions between reporting periods

Source of emissions	2015/16 (tCO ₂ e)	2016/17 (tCO ₂ e)	2017/18 (tCO ₂ e)	2018/19 (tCO ₂ e)	2019/20 (tCO ₂ e)	Change since 2018/19
Electricity ⁴	156,003	135,848	105,050	86,697	71,521	-18%
Natural gas	139,609	135,402	137,061	138,830	138,356	-0.3%
Other heating fuel	2,986	1,494	2,220	1,967	2,076	6%
F-gases	612	1,124	1,022	1,553	1,197	-23%
Waste and recycling	3,076	2,288	2,052	2,287	1,791	-22%
Water and sewerage	2,663	2,716	2,630	2,532	2,347	-7%
Business travel	77,628	81,274	75,551	66,835	35,832	-46%
Fleet	1,782	1,446	1,358	1,387	883	-36%
Commuting	13,283	13,284	27,279	32,629	22,854	-30%
Renewables	94	138	112	556	817	47%
Int. student travel	-	-	-	6,118	25,982	325%
Domestic student travel	-	-	-	-	380	-
Supply chain	-	-	-	-	35,000	-
Other	283	-	103	99	93	-6%
Total	398,017	375,014	354,440	341,491	339,127	-1%

The greatest reduction came from business travel which reduced by 46%, a significant portion of this reduction is due to pandemic related travel restrictions. There was also a 36% reduction in fleet emissions and a 30% reduction in commuting emissions. The

³ Please note the slight discrepancy is due to rounding

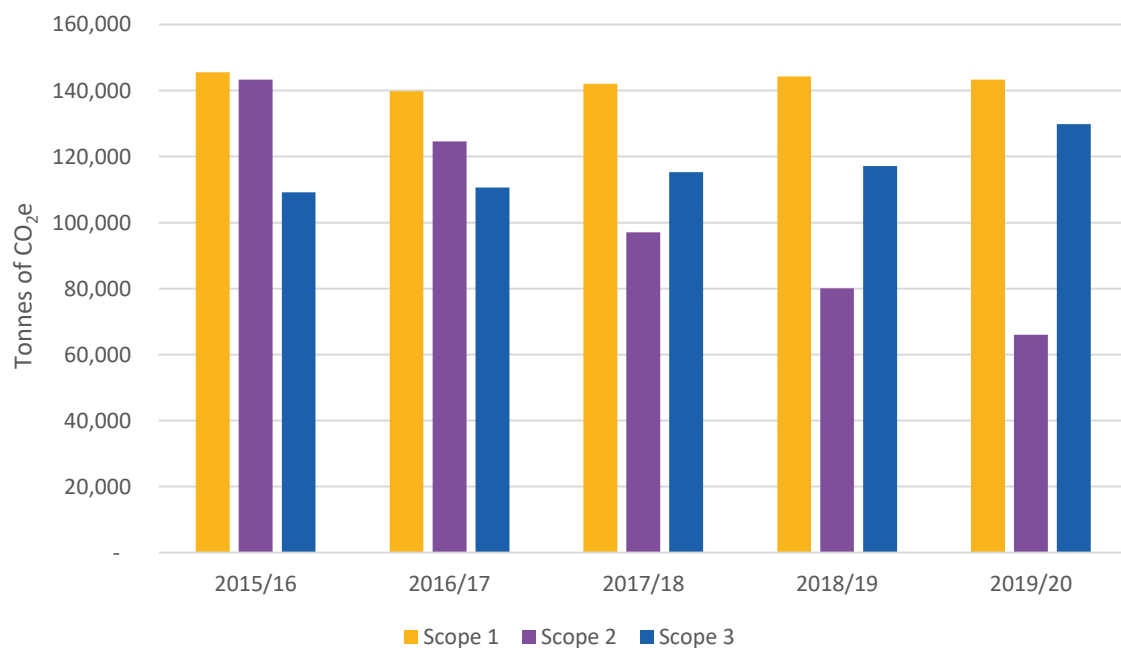
⁴ Please note that SSN include transmission & distribution in this category

emissions associated with grid electricity reduced by 18%, however, it should be noted that the carbon intensity of UK grid electricity reduced by 9% during the reporting period. The 47% increase in emissions from renewables is due to greater use of biomass. The 325% increase in international student travel emissions is due to a second institution expanding its reporting boundary to include this source of emissions. Emissions associated with supply chain, domestic student travel and hotel stays were also reported for the first time this year. These additions total 55,591 tonnes of CO₂e and account for 16% of total emissions in 2019/20. Without this change, total emissions would have fallen by 57,954 tonnes of CO₂e, or 17% since 2018/19.

A comparison of total emissions broken down by scope between reporting periods is shown in Figure 3. This shows that since PBCCD reporting began in 2015/16:

- Scope 1 emissions have reduced by 2%;
- Scope 2 emissions have reduced by 54%; and
- Scope 3 emissions have increased by 19%.

Figure 3: Comparison of emissions broken down by scope between reporting periods



Please note that the increase in Scope 3 emissions is primarily due to the expansion in reporting boundaries⁵ and a significant portion of the Scope 2 emissions reduction is the

⁵ See Reporting Quality section for further details (Page 5)

result of the decarbonisation of the UK electricity grid, which has reduced by 43% since 2016.

In comparison, it is concerning that Scope 1 emissions have only reduced by 2% since 2015/16. These are direct emissions and reducing them by decarbonising heat will be essential to meeting the Scottish Government net zero targets.

Action: EAUC-Scotland will continue to support institutions to develop net zero plans, share best practice projects, signpost sources of funding and collaboration opportunities.

Case study: University of Glasgow

Guidance for Sustainable Business Travel

The University of Glasgow declared a climate emergency in 2019 and has signed the UNFCCC Race to Zero. As part of its [Climate Change Strategy](#) the university has committed to reduce business travel by 7.5% each year until 2030 and has published [Guidance for Sustainable Business Travel for Staff and Postgraduate Researchers](#). The key messages in the guidance are:

- Avoid travelling where possible;
- Identify opportunities to fund and use virtual solutions in grant proposals;
- Choose public transport where travel is required; and
- Maximise the value of any given travel episode.

To support the transition the university has produced a sustainable travel decision aid that has been adapted from the EAUC-Scotland [Travel Better Package](#). Each School, Institute and Service will be required to report their progress bi-annually to monitor progress.

Performance Metrics

As shown in Table 4, average HE sector emissions during 2019/20 were 0.08 tonnes of CO₂e per m² and 1.79 tonnes of CO₂e per Full Time Equivalent Student (FTES), both an increase since 2018/19 due to the expansion of reporting boundaries⁶. These performance metrics will allow institutions to monitor relative progress between reporting periods and facilitate meaningful comparison between similar institutions.

Table 4. Performance metrics for 2019/20

Performance metrics				Change since
	2017/18	2018/19	2019/20	2018/19
Floor area (tCO ₂ e/m ²)	0.08	0.08	0.08	5%
Students (FTES)	1.60	1.51	1.79	18%

Action: EAUC-Scotland will continue to encourage institutions to submit this data and improve the quality of the performance metrics. To support this work EAUC-Scotland will sit on the Advisory Group for the Scottish Government's Energy Benchmarking Initiative.

⁶ See Reporting Quality section for further details (Page 5)

Summary & Recommendations

The fifth mandatory year of the Public Bodies Climate Change Duties Reporting has again shown progression for universities with GHG emissions and sustainability reporting.

Headline points to note:

- There was only a 1% decrease in HE sector GHG emissions from 2018/19 to 2019/20 due to a significant expansion in reporting boundaries. Without this addition sector emissions would have reduced by 17%.
- Since 2015/16 Scope 2 emissions have reduced by 54% while Scope 1 emissions have only reduced by 2% over the same period;
- The training and peer review sessions that EAUC-Scotland provided to institutions has resulted in better quality data and more key sources of emissions being reported; and
- The pandemic has not had a material impact on the quality of data submitted but has contributed to reductions in emissions related to the estate and travel.

The progress achieved to date is impressive but going forward it is important that the HE sector prioritises decarbonising heat in order to reduce its Scope 1 emissions. These emissions are generally under the direct control of institutions and should therefore present some of the greatest reduction opportunities. Delivering these reductions will be essential to meet the more ambitious targets set by the Scottish Government in the [Climate Change \(Duties of Public Bodies: Reporting Requirements\) \(Scotland\) Amendment Order 2020](#).

Business travel is another key source of emissions that the HE Sector needs to address. The changes to working practices made necessary by the pandemic, and the subsequent reductions shown in this report, present a huge opportunity to deliver long-term organisational change in relation to both business travel and commuting.

With the significant developments in policy from the Scottish Government and the suite of support on offer from EAUC-Scotland, it is hoped that future reporting years will see further improvements in both the quality of submissions and the reductions delivered.



Prepared and delivered by EAUC-Scotland

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