

EAUC-Scotland Public Bodies Climate Change Duties Overview Report

2021 Higher Education Submissions
Analysis & Recommendations

June 2022

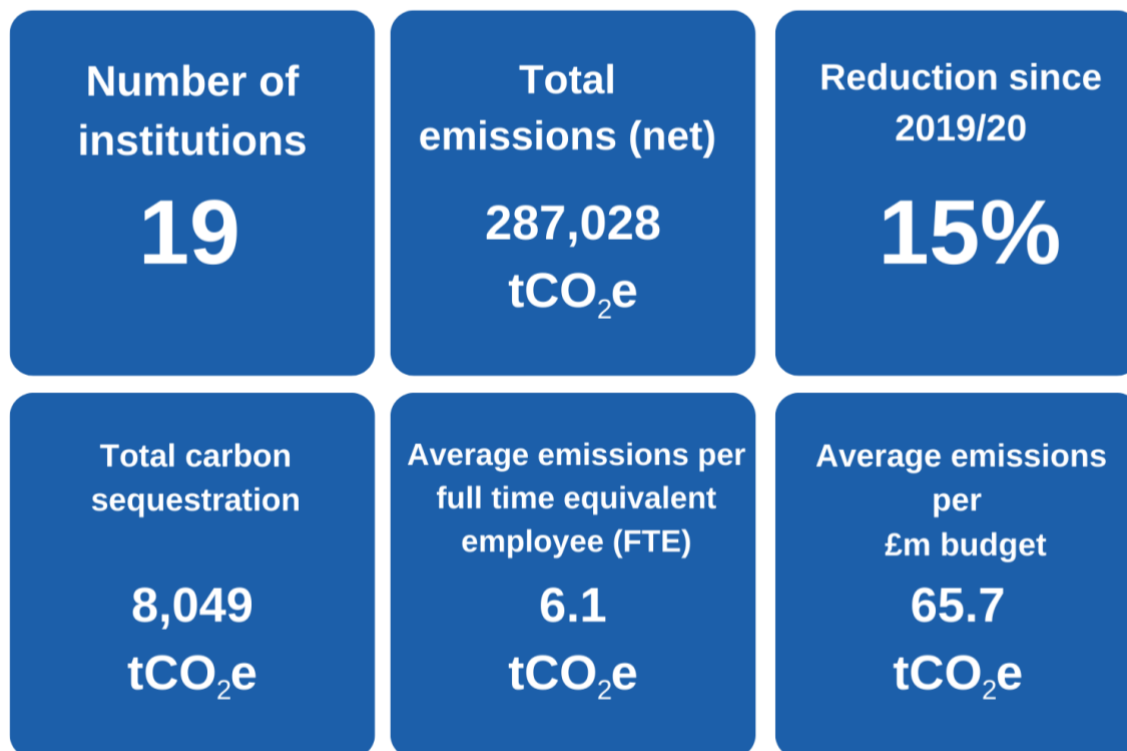
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Executive Summary

Total greenhouse gas (GHG) emissions (net) for the Higher Education (HE) sector reported during 2020/21 were 287,028 tonnes of carbon dioxide equivalent (CO₂e). Total reported GHG emissions have reduced by 15% since 2019/20 and by 28% since reporting began in 2015/16.

Figure 1. Key figures for 2020/21



Average emissions per full time equivalent (FTE) employee were 6.1 tonnes of CO₂e and average emissions per million pounds of budget were 65.7 tonnes of CO₂e.

There has again been an improvement in the quality of reporting this year and many institutions expanded their operational reporting boundaries to include key sources of emissions like homeworking, international student travel, supply chain and land use.

Forestry and soil carbon sequestration of 8,049 tonnes of CO₂e was also reported for the first time this year.

Introduction

The Public Bodies Climate Change Duties (PBCCD) reports from 19 Scottish universities (100% compliance) were submitted for the sixth mandatory year on 30 November 2021.

The data submitted predominantly covered the academic year 2020/21, which included periods of lockdown and travel restrictions. 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.

EAUC-Scotland has continued to offer support to the Higher Education (HE) sector to improve reporting. This year it included:

- Virtual training sessions on improving GHG emissions reporting;
- Group and one-to-one peer review sessions;
- Contributing to the development of the [Public Sector Leadership on the Global Climate Emergency Guidance](#);
- [Briefing Paper on New PBCCD Reporting Guidance for 2022](#); and
- Engaging with the Universities Scotland University Secretaries Group on new reporting requirements.

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, 89% are reporting business travel emissions and 68% are reporting home working emissions.

Table 1. Percentage of institutions reporting each source of emissions

Emissions source	Number of institutions reporting	Percentage of total	Change from 2019/20
Energy	19	100%	-
Waste	19	100%	-
Water	19	100%	-
Business travel	17	89%	↑
Home working	13	68%	new source
Fleet ¹	12	63%	↓
Commuting	6	32%	↑
F-gas	7	37%	↑
International student travel	2	11%	-
Domestic student travel	1	5%	-
Supply chain	4	21%	↑
Land use & livestock	1	5%	new source
Total	19	-	-

The quality of the reports has improved again this year and many institutions have expanded their operational reporting boundaries:

- Thirteen institutions added home working;
- Three institutions added supply chain;
- Three institutions added business travel;
- One institution added f-gas; and
- One institution added land use, livestock, forestry and soil carbon sequestration.

Action: EAUC-Scotland will continue to work with institutions to improve the quality of reporting and expand reporting boundaries in line with the [Public Sector Leadership on the Global Climate Emergency](#) guidance.

¹ The reduction in fleet reporting is likely due to the transition to electric vehicles (grid electricity consumption)

Analysis

Total reported GHG emissions (net) from the HE sector in 2020/21 were 287,028 tonnes of CO₂e. The majority arose from natural gas consumption which contributed 139,559 tonnes of CO₂e or 47% of total emissions, followed by grid electricity consumption which accounted for 59,004 tCO₂e or 20% of total emissions. Supply chain contributed 41,393 tonnes of CO₂e or 14% of total emissions and livestock and land use contributed 11,616 tonnes of CO₂e or 4% of total emissions. A full breakdown of emissions can be seen in Table 2.

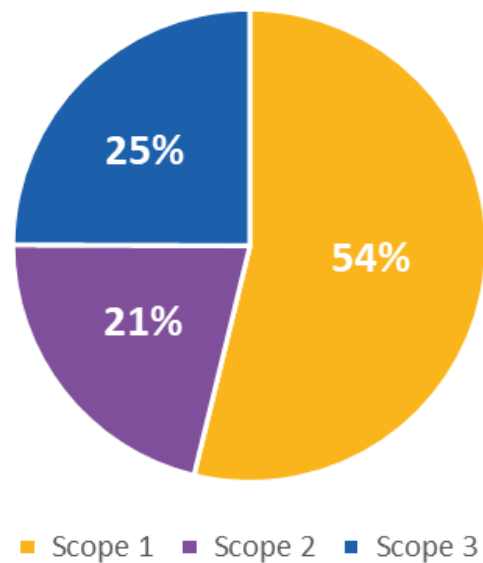
Table 2: Total HE Sector emissions 2020/21

Emissions source	HE Sector 2020/21 (tCO ₂ e)	Percentage of total
Scope 1		
Natural gas	139,559	47%
Biomass	771	0.3%
Gas oil	935	0.3%
Other fuels	2,933	1%
Fleet vehicles	1,148	0.4%
Livestock & land use	11,616	4%
F-gases	1,790	1%
Subtotal	158,750	54%
Scope 2		
Grid electricity	59,004	20%
Purchased heat	3,730	1%
Subtotal	62,734	21%
Scope 3		
Electricity transmission & distribution	5,217	2%
Heat transmission & distribution	91	0.03%
Waste	1,592	0.5%
Water	539	0.2%
Business travel	1,848	0.6%
Staff commuting	3,864	1%
Student commuting	2,157	0.7%
International student travel	9,169	3%
Domestic student travel	256	0.1%
Homeworking	7,468	3%
Supply chain	41,393	14%
Subtotal	73,593	25%
Total emissions (gross)	295,077	100%
Carbon sequestration		
Forestry	- 2,450	
Soil	- 5,599	
Total sequestration	- 8,049	
Total emissions (net)	287,028	

As shown in Figure 2, in the reporting period 2020/21 Scope 1 sources account for 54% of total emissions (gross), Scope 2 sources account for 21% and Scope 3 sources account for the remaining 25%.

Between 2019/20 and 2020/21 total reported emissions for the HE sector reduced by 52,099 tonnes of CO₂e, or 15%. A breakdown of the percentage change in emissions for each source is shown in Table 3 on the next page. The categories are slightly different from Table 2 as historic data is only available in this format.

Figure 2: Breakdown of emissions by scope



The greatest saving came from business travel which reduced by 95% due to pandemic related travel restrictions. There was also a 77% reduction in water & sewerage emissions and a 74% reduction in commuting emissions.

The emissions associated with grid electricity reduced by 10%, however, it should be noted that the carbon intensity of UK grid electricity reduced by 9% during the reporting period.

The 86% increase in emissions from other heating fuel is due to temporary use of diesel generators at one institution. The 50% increase in refrigerant emissions is due to an improvement in reporting.

This year, for the first time, one institution reported emissions associated with livestock & land use of 11,616 tonnes of CO₂e and emissions removal from forestry and soil carbon sequestration of 8,049 tonnes of CO₂e. The net impact of these additions accounts for 1% of total emissions.

Table 3: Comparison of emissions between reporting periods

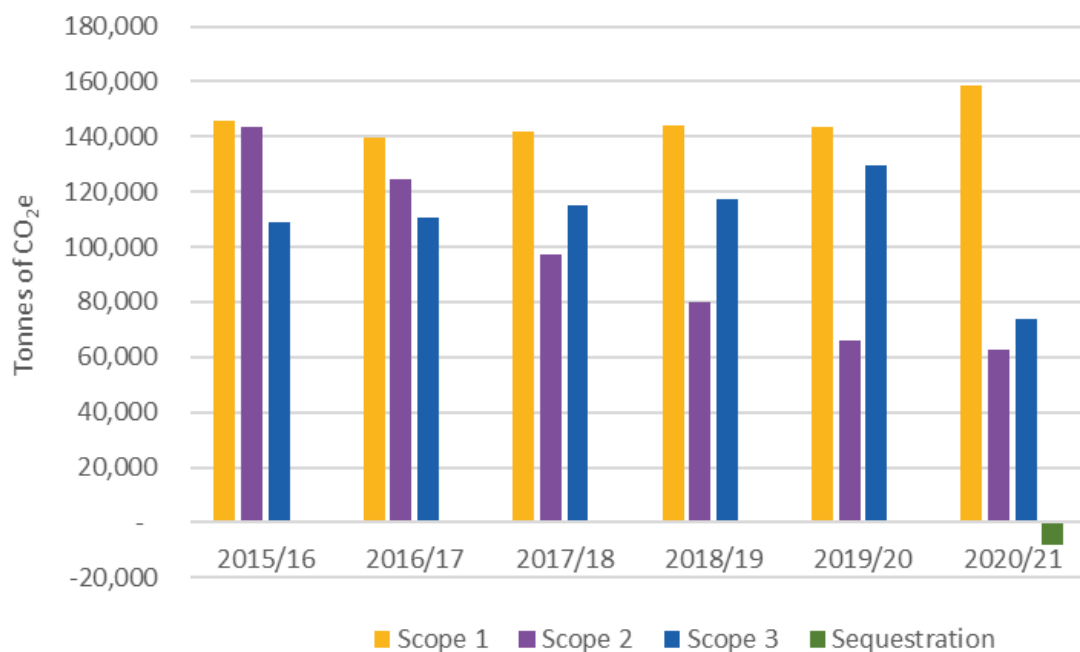
Source of emissions	2015/16 (tCO ₂ e)	2016/17 (tCO ₂ e)	2017/18 (tCO ₂ e)	2018/19 (tCO ₂ e)	2019/20 (tCO ₂ e)	2020/21 (tCO ₂ e)	Change since 2019/20
Electricity ¹	156,003	135,848	105,050	86,697	71,521	64,220	-10%
Purchased heat	-	-	-	-	-	3,820	-
Natural gas	139,609	135,402	137,061	138,830	138,356	139,559	0.9%
Other heating fuel	2,986	1,494	2,220	1,967	2,076	3,868	86%
Refrigerants	612	1,124	1,022	1,553	1,197	1,790	50%
Land use & livestock	-	-	-	-	-	11,616	-
Waste and recycling	3,076	2,288	2,052	2,287	1,791	1,592	-11%
Water and sewerage	2,663	2,716	2,630	2,532	2,347	539	-77%
Travel	77,628	81,274	75,551	66,835	35,832	1,848	-95%
Transport fuel	1,782	1,446	1,358	1,387	883	1,148	30%
Commuting	13,283	13,284	27,279	32,629	22,854	6,021	-74%
Homeworking	-	-	-	-	-	7,468	-
Renewables	94	138	112	556	817	771	-6%
International student travel	-	-	-	6,118	25,982	9,169	-65%
Domestic student travel	-	-	-	-	380	256	-
Supply chain	-	-	-	-	35,000	41,393	-
Other	283	-	103	99	93	-	-
Forestry & soil carbon sequestration	-	-	-	-	-	8,049	-
Total	398,017	375,014	354,440	341,491	339,127	287,028	-15%

² Please note that SSN include transmission and distribution losses in this category

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 increased by 9%;
- Scope 2 emissions have reduced by 56%; and
- Scope 3 emissions have reduced by 25%.

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



Prior to 2020/21 Scope 1 emissions had reduced slightly and the increase this year is primarily due to the expansion in reporting boundaries³ and the temporary use of diesel generators at one institution.

The 56% reduction in Scope 2 emissions since 2015/16 has been achieved through energy efficiency projects, renewables and the decarbonisation of the UK electricity grid, which has reduced grid carbon intensity by 48% over the past 5 years. The 25% reduction in Scope 3 emissions was due to pandemic related travel restrictions, which drastically reduced emissions from business travel, commuting and student travel.

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

³ See Reporting Quality section for further details (Page 5)

Performance Metrics

As shown in Table 4, average HE sector emissions during 2020/21 were 65.7 tonnes of CO₂e per million pounds of budget and 6.1 tonnes of CO₂e per full time equivalent (FTE) employee. These performance metrics have been modified from previous reporting periods to align with wider public sector reporting.

Table 4. Performance metrics for 2020/21

Performance metrics	2020/21
Budget (tCO ₂ e/£m)	65.7
Employees (tCO ₂ e/FTE)	6.1

Action: EAUC-Scotland will continue to encourage institutions to submit this data and improve the quality of the performance metrics.

Case study: University of Edinburgh

The University of Edinburgh's [Sustainable Travel Policy \(2021\)](#) sets out how all local, national and international travel taken on behalf of the University should take place.

The policy recommends a Climate Conscious Travel approach of:

- Understanding the environmental impacts of travel and using lower-carbon methods when possible
- Minimising the overall number of journeys taken
- Sequestering the carbon emissions from travel

The policy is designed to ensure the safety of staff and students and better manage finances.

Summary & Recommendations

The sixth mandatory year of the Public Bodies Climate Change Duties (PBCCD) reporting has shown significant progression for universities with GHG emissions and sustainability reporting.

Headline points to note:

- There has been a 15% decrease in HE sector GHG emissions (net) since 2019/20, primarily due to pandemic related travel restrictions;
- Scope 1 emissions have increased this year by 11% due to an expansion of reporting boundaries; and
- 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 such as supply chain and land use.

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 a key source of emissions for the HE Sector. Changes to working practices in 2020/21 made necessary by the pandemic have reduced these emissions by 95%. Going forward this presents a huge opportunity to deliver long-term organisational change and emissions reductions from 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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