

EAUC-Scotland Public Bodies Climate Change Duties Overview Report

2021 Further & Higher Education Submissions
Analysis & Recommendations

June 2022

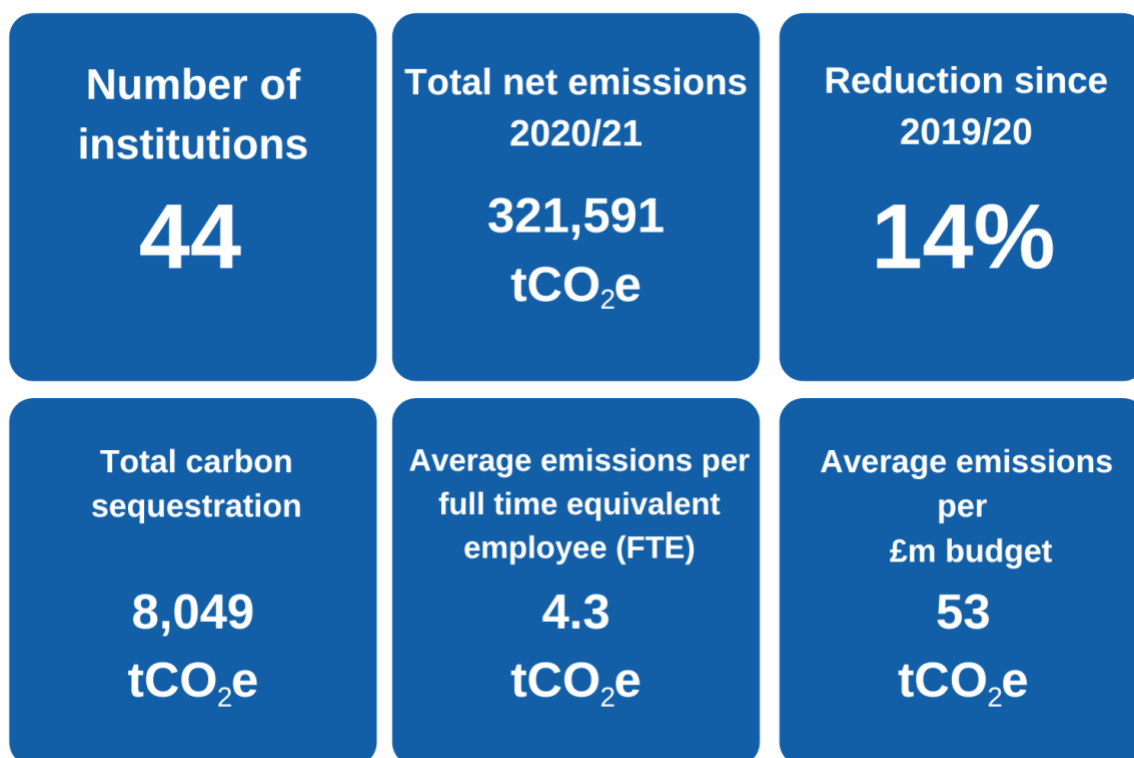
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Executive Summary

Net greenhouse gas (GHG) emissions for the Further & Higher Education (FHE) sector reported during 2020/21 were 321,591 tonnes of carbon dioxide equivalent (CO₂e). Total reported emissions reduced by 14% since 2019/20, partly due to pandemic related lockdowns and travel restrictions, and by 29% since mandatory reporting began in 2015/16.

Figure 1. Key figures for 2020/21



Average emissions per full time equivalent (FTE) employee were 4.3 tonnes of CO₂e and average emissions per million pounds of budget were 53 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 44 Scottish institutions were submitted for the sixth mandatory year on 30 November 2021. This was 100% compliance and represents an improvement on last year when one small institution was unable to provide data.

The data submitted predominantly covered the academic year 2020/21, which included periods of lock down 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 Further & Higher Education (FHE) 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](#);
- Presenting at CDN's [College Climate Change Conference](#); 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 FHE sector. However, 100% of institutions are reporting the GHG emissions associated with premises energy consumption, 95% are reporting waste emissions, 93% are reporting water emissions and 86% are reporting business travel.

Table 1. Percentage of institutions reporting each source of emissions

Emissions source	Number of institutions reporting	Percentage of total	Change from 2019/20
Energy	44	100%	↑
Waste	42	95%	↑
Water	41	93%	↑
Business travel	38	86%	↑
Home working	34	77%	new source
Fleet ¹	28	64%	↓
F-gas	12	27%	↑
Commuting	8	18%	↑
Supply chain	4	9%	↑
International student travel	2	5%	-
Domestic student travel	1	2%	-
Land use & livestock	1	2%	new source
Total	44	-	-

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

- Thirty-four institutions added home working;
- Three institutions added supply chain;
- Three institutions added business travel;
- Two institutions added f-gas;
- One institution added commuting; 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 (emission reporting then moves to grid electricity consumption)

Analysis

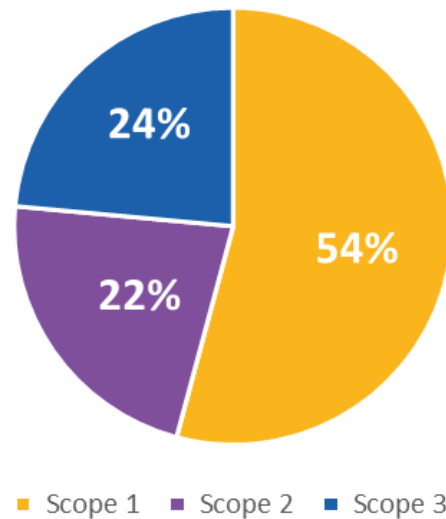
Total reported GHG emissions from the FHE sector in 2020/21 were 321,591 tonnes of CO₂e. The majority arose from natural gas consumption which contributed 157,228 tonnes of CO₂e or 48% of total emissions, followed by grid electricity consumption which accounted for 69,757 tCO₂e or 21% of total emissions. Supply chain contributed 41,393 tonnes of CO₂e or 13% 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 FHE sector emissions 2020/21

FHE Sector 2020/21		
Emissions source	(tCO ₂ e)	Percentage
Scope 1		
Natural gas	157,228	48%
Biomass	855	0.3%
Gas oil	1,908	1%
Other fuels	3,128	0.9%
Fleet vehicles	1,278	0.4%
Livestock & land use	11,616	4%
F-gases	2,546	1%
Subtotal	178,559	54%
Scope 2		
Grid electricity	69,757	21%
Purchased heat	3,730	1%
Subtotal	73,487	22%
Scope 3		
Electricity transmission & distribution	6,161	2%
Heat transmission & distribution	91	0.03%
Waste	1,831	1%
Water	616	0.2%
Business travel	1,988	0.6%
Staff commuting	3,938	1%
Student commuting	2,428	1%
International student travel	9,169	3%
Domestic student travel	256	0.1%
Homeworking	9,722	3%
Supply chain	41,393	13%
Subtotal	77,593	24%
Total emissions (gross)	329,640	100%
Carbon sequestration		
Forestry	- 2,450	
Soil	- 5,599	
Total sequestration	- 8,049	
Total emissions (net)	321,591	

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 of 22% of the total and Scope 3 sources account for the remaining 24%.

Figure 2: Breakdown of emissions by scope



Between 2019/20 and 2020/21 total reported emissions for the FHE sector reduced by 53,570 tonnes of CO₂e, or 14% 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.

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 72% reduction in commuting emissions.

The emissions associated with grid electricity reduced by 12%, however, it should be noted that the carbon intensity of UK grid electricity reduced by 9% during the reporting period.

The 90% increase in refrigerant emissions is due to an improvement in reporting. The 72% increase in emissions from other heating fuel is due to temporary use of diesel generators at one institution.

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 ¹

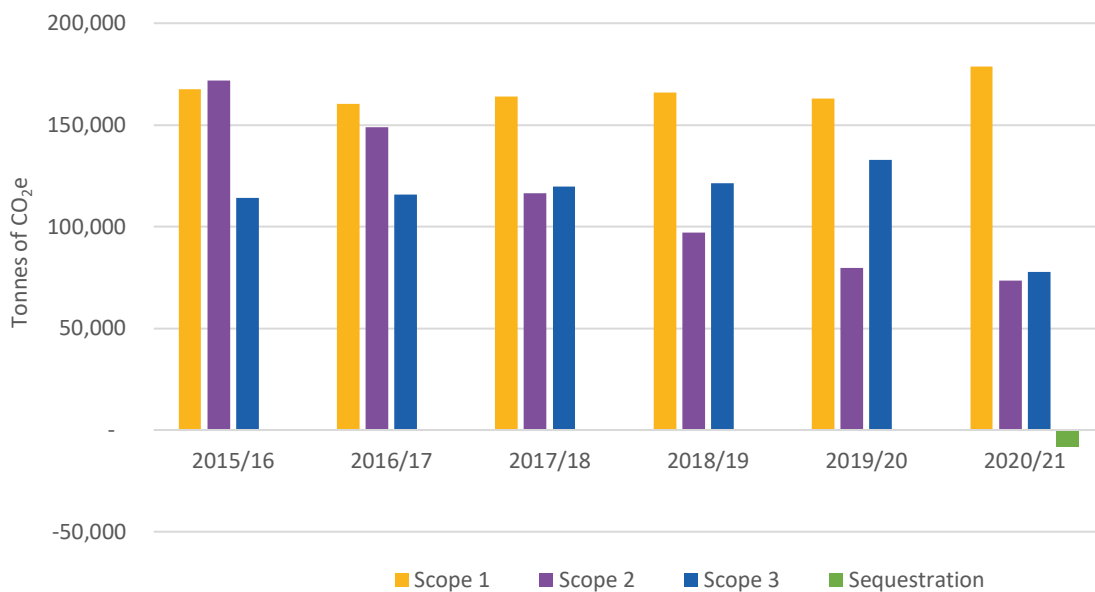
Source of emissions	2015/16 (tCO ₂ e)	2016/17 (tCO ₂ e)	2017/18 (tCO ₂ e)	2018/19 (tCO ₂ e)	2019/20 (tCO ₂ e)	2020/21 (tCO ₂ e)	Change since 2019/20
Electricity ¹	187,033	162,582	126,098	105,071	86,233	75,918	-12%
Purchased heat	-	-	-	-	-	3,820	-
Natural gas	159,067	153,610	156,464	157,860	156,641	157,228	0.4%
Other heating fuel	4,531	3,105	4,010	3,711	2,926	5,036	72%
Refrigerants	612	1,124	1,022	1,764	1,341	2,546	90%
Land use & livestock	-	-	-	-	-	11,616	-
Waste and recycling	3,804	2,949	2,674	2,878	2,068	1,831	-11%
Water and sewerage	3,032	3,080	3,018	2,862	2,698	616	-77%
Travel	79,041	83,355	77,499	68,528	36,859	1,988	-95%
Transport fuel	2,800	1,771	1,594	1,808	1,111	1,278	15%
Commuting	13,283	13,284	27,279	32,677	22,900	6,365	-72%
Homeworking	-	-	-	-	-	9,722	-
Renewables	148	202	214	677	929	855	-8%
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	453,632	425,062	399,975	384,054	375,160	321,591	-14%

¹ 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 6%;
- Scope 2 emissions have reduced by 57%; and
- Scope 3 emissions have reduced by 32%.

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 boundaries and the temporary use of diesel generators at one institution.

The 57% 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 32% 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.

Case study: Fife College

Dunfermline Learning Campus

Dunfermline Learning Campus is a collaboration between Fife College & Fife Council and is a pathfinder project for the Scottish Futures Trust's [Net Zero Public Sector Buildings Standard](#). It is due to open in 2024 and will be the first net zero campus in Scotland. The project team used dynamic simulation modelling to set ambitious operational carbon targets and energy consumption is predicted to be 64% lower than average. The embodied emissions associated with construction materials have also been considered and the project aims to reduce these by 40%.



Performance Metrics

As shown in Table 4, average FHE sector emissions during 2020/21 were 53 tonnes of CO₂e per million pounds of budget and 4.3 tonnes of CO₂e per full time equivalent employee (FTE). 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
Universities	
Budget (tCO ₂ e/£m)	65.7
Employees (tCO ₂ e/FTE)	6.1
Colleges	
Budget (tCO ₂ e/£m)	43.0
Employees (tCO ₂ e/FTE)	2.9
FHE Sector	
Budget (tCO ₂ e/£m)	53.0
Employees (tCO ₂ e/FTE)	4.3

Colleges continue to have lower average emissions per million pounds of budget and FTE, due to differences in operational reporting boundaries and lower rates of business travel.

These performance metrics will allow institutions to monitor relative progress between reporting periods and facilitate meaningful comparison between similar institutions.

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

Summary & Recommendations

The sixth mandatory year of the Public Bodies Climate Change Duties Reporting has again shown progression for colleges & universities with sustainability reporting.

Headline points to note:

- There was a 14% decrease in FHE sector GHG emissions from 2019/20 to 2020/21 primarily due to a pandemic related lockdowns and travel restrictions.
- Since 2015/16 Scope 2 emissions have reduced by 57% while Scope 1 emissions have increased by 6% 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.

Progress achieved to date is positive but going forward it is important that the FHE 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 CDN's [Climate Emergency Commitment](#) and 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 FHE 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 scale of reductions delivered.



Prepared and delivered by EAUC-Scotland

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