

EAUC Scotland Public Bodies Climate Change Duties Overview Report

2022 University Submissions Analysis & Recommendations

June 2023

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Executive Summary

This analysis report covers sector 2021/22 PBCCD reporting submissions. This was the first year that public bodies were expected to follow the Scottish <u>Government's Public Sector</u> <u>Leadership on the Global Climate Emergency</u>.

Reported net greenhouse gas (GHG) emissions for the Scottish university sector during 2021/22 were 650,069 tonnes of carbon dioxide equivalent (tCO₂e). This includes 658,118 tCO₂e gross reported emissions and 8,049 tCO₂e reported carbon sequestration. Total reported net emissions increased by 126% since 2020/21, mainly due to increased reporting of Scope 3 emission sources (primarily supply chain emissions, international student travel emissions and student commuting emissions) and a reported increase in sector business travel and commuting emissions following the reopening of global travel and campus operations. Reported net emissions have increased by 63% since mandatory reporting began in 2015/16.

As the university sector fully meets the expectations set out in the <u>Scottish Government's</u> <u>Public Sector Leadership on the Global Climate Emergency</u>, it is expected that reported Scope 3 emissions and total reported emissions will increase significantly more.

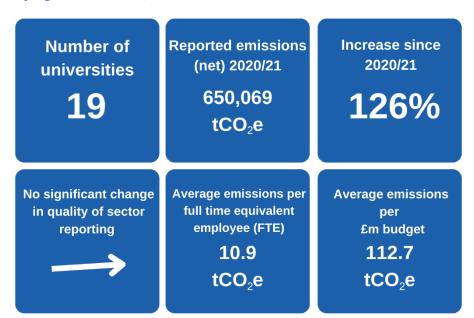


Figure 1. Key figures for 2021/22

Average emissions per full time equivalent (FTE) employee were 10.9 tCO₂e and average emissions per million pounds of budget were 112.7 tCO₂e.

Whilst there are examples of best practice reporting by some universities, this year there has only been a small improvement in the quality of reporting by the sector as a whole. As a result, there remains significant gaps in institutional target setting and reporting against the latest Scottish Government guidance.

Key trends and recommendations for the Scottish university sector include:

1. Priority Area 1: Expanding PBCCD Reporting

Universities should ensure that all relevant emission sources are included in 2022/23 PBCCD reports to be compliant with the latest Scottish Government guidance.

2. Priority Area 2: Natural Gas Emissions

The university sector has made minimal progress in reducing absolute emissions from natural gas. Over the past 7 years reported emissions from natural gas have increased by 0.5%. With the Scottish Government expectation of zero direct emissions from public body estate buildings by 2038, Scottish universities must focus efforts to understand, reduce and decarbonise heating emissions.

3. Priority Area 3: Business Travel Emissions

Business travel emissions have rebounded from 2020/21's reported 1,848 tCO₂e to 2021/22's reported 15,499 tCO₂e. This remains significantly below pre-Covid emissions of 68,526 tCO₂e. The sector and supporting sector agencies should look to lock-in changed travel habits and ensure emissions from business travel do not continue to rise in future reporting years.

4. Priority Area 4: Supply Chain Engagement

Supply chain emissions represent 53% of reported sector emissions for 2021/22, despite only 42% of Scottish universities reporting this emission source within their PBCCD return. The sector should proactively engage with their supply chains to improve sustainability understanding and action. Whilst it is recognised that with the current spend-based emission calculator tools available to the sector for monitoring supply chain emissions the impact of institutional actions will unlikely achieve an observed emission reduction, supply chain engagement is an essential sustainability leadership action and can be reported within PBCCD reports.

5. EAUC Scotland Supporting the Sector

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. EAUC Scotland are also working with key stakeholders to develop new tools, guidance and sector leadership to tackle key emission areas. Upcoming activities will include:

- Launching an International Student Travel Emissions Calculator Tool;
- Facilitating workshops with sector bodies focused on understanding and reducing sector business travel aviation emissions;
- Publishing guidance on how institutions can use the output from APUC's Scope 3 Supply Chain Emissions Tool within PBCCD reporting and for supply chain engagement.

Priority actions for key university stakeholders:

1. Actions for senior leaders:

- a) ensure robust and extensive institutional monitoring systems are in place to capture and report emissions from all relevant emission sources;
- b) understand the cost for decarbonising the institutional estate and ensure spending and investment strategies for the institution align with net zero obligations;
- c) understand the drivers for business travel within the institution and set emission reduction targets, as identified within Scottish Government guidance;
- update travel policies to include a ban on the use of flights for UK mainland domestic business travel, as identified within Scottish Government guidance;
- e) review institutional digital conferencing infrastructure.

2. Actions for sustainability leads:

- a) review Scottish Government guidance and current institutional PBCCD reporting; identify and address data and knowledge gaps for PBCCD submissions;
- b) review business travel monitoring and work to address data gaps and/or improve data quality;
- c) ensure PBCCD returns include a breakdown of all relevant business travel emission sources (e.g. fleet vehicle; private car; van; flight category);

d) establish internal groups and forums to share best practice in reducing the need for business travel.

3. Actions for sustainability and procurement leads:

- a) review current procurement strategies and ensure alignment with institutional sustainability objectives;
- b) use the APUC scope 3 supply chain emission tool (or similar) to report annual institutional supply chain emissions within PBCCD submissions;
- c) use frameworks and tools such as EcoVardis to review supply chain sustainability credentials alongside wider priorities (e.g. modern day slavery)

Introduction

The Public Bodies Climate Change Duties (PBCCD) reports from 19 Scottish universities were submitted for the seventh mandatory year on 30 November 2022, resulting in 100% sector compliance.

The data submitted predominantly covered the academic year 2021/22, which included periods of international Covid-19 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 <u>Climate Change (Duties of Public</u> <u>Bodies: Reporting Requirements) (Scotland) Amendment Order 2020</u> 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 Scottish college and university sector to improve reporting. Over the past EAUC Scotland programme (2020-23) it included:

- Virtual training sessions on improving GHG emissions reporting;
- Group and one-to-one peer review sessions;
- Contributing to the development of the <u>Public Sector Leadership on the Global</u> <u>Climate Emergency Guidance;</u>
- 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, the Committee of Scottish [university] Chairs and the Scottish Association of University Directors of Estates 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 Scottish university sector. However, 100% of institutions are reporting the emissions associated with estates energy consumption, waste management and water supply & treatment, and 84% are reporting business travel and homeworking emissions.

Emissions source	Number of universities reporting	Percentage of total	Change from 2020/21
Energy	19	100%	-
Waste	19	100%	-
Water	19	100%	-
Business travel ¹	16	84%	\checkmark
Home working	16	84%	\uparrow
Fleet vehicles ¹	11	58%	\checkmark
F-gas	8	42%	\uparrow
Supply chain	8	42%	\uparrow
Staff commuting	6	32%	-
Student commuting	5	26%	\uparrow
International student travel	4	21%	\uparrow
Domestic student travel	2	11%	\uparrow
Land use & livestock	1	5%	-
Leased assets	1	5%	New source
Fuel- and energy related activities (WTT)	1	5%	New source
Investments	1	5%	New source

Table 1. Percentage of institutions reporting each source of emissions

The quality of the reports has improved this year for some universities through expanding their operational reporting boundaries to include new emission sources for the first time. This included:

- Four universities adding supply chain emissions;
- Three universities adding homeworking emissions;
- Two universities adding international student travel emissions;
- One university adding f-gas emissions;
- One university adding student commuting emissions;

¹ In 2020/21, 17 and 12 universities reported business travel and fleet vehicles emissions, respectively.

- One university adding domestic student travel emissions;
- One university adding fuel- and energy related activities (well-to-tank) emissions;
- One university adding investments emissions;
- One university added leased assets emissions.

Whilst the quality of reports has improved again for several institutions, the sector as a whole has not significantly improved the scope of reported emissions compared to 2020/21. This is despite the Scottish Government guidance for the public sector coming into play for the first time in 2021/22's reports.

In order to be compliant with the guidance, Scottish universities should report all relevant emission sources for 2022/23 PBCCD submissions. Note that the majority of the emission sources listed in Table 1 are relevant for all universities in Scotland.

Action: EAUC Scotland will continue to work with institutions to improve the quality of reporting and expand reporting boundaries in line with the <u>Public Sector Leadership on</u> <u>the Global Climate Emergency</u> guidance. The next sector PBCCD Peer Review session will be 14th November 2023 (online).

Analysis

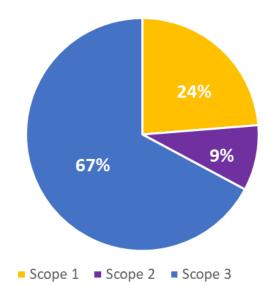
Total reported net emissions from the university sector in 2021/22 were 650,069 tCO₂e. This total includes 658,118 tCO₂e of reported gross emissions and 8,049 tCO₂e of emissions sequestered through forest and soil management.

As shown in Figure 2, in the reporting period 2021/22 Scope 1 sources accounted for 24% of total reported emissions, Scope 2 sources accounted of 9% of the reported total and Scope 3 sources accounted for the remaining 67%.

The majority of reported emissions arose from:

- Supply chains 348,326 tCO₂e (53% of total reported emissions)
- Natural gas 140,345 tCO₂e (21% of total reported emissions)





• Grid electricity consumption – 58,356 tCO₂e (9% of total reported emissions)

A full breakdown of reported emissions can be seen in Table 2.

Between 2020/21 and 2021/22 total reported net emissions for the university sector increased by 363,042 tCO₂e, or 126% of total emissions. A breakdown of the percentage change in emissions for each source is shown in Table 3. The increase in reported emissions is predominantly due to expanded reporting by the sector of key Scope 3 emissions sources (primarily supply chain emissions, international student travel emissions and student commuting emissions) which should be viewed positively. If the university sector meets the expectations set out in the <u>Scottish Government's Public Sector Leadership on the Global</u> <u>Climate Emergency</u>, it is expected that reported Scope 3 emissions and total reported emissions will increase significantly again.

Noticeable emission trends beyond expanding reporting include:

 There has been no progress on reducing absolute reported emissions from natural gas between 2015/16 and 2021/22 reporting periods (139,609 tCO₂e vs 140,345 tCO₂e, respectively).

- There has been a 1% reduction in reported electricity emissions between 2020/21 and 2021/22 reporting periods, whilst emissions intensity of national grid electricity reduced by 8% over the same period. It is expected that the resumption of onsite campus operations that were previously virtual in response to Covid-19 have increased overall electricity consumption by the university sector compared to the previous year, resulting in a smaller than expected emissions reduction. Positively, reported emissions from electricity for the Scottish university sector have reduced by 27% since pre-Covid-19 (2018/19).
- A 739% increase in business travel emissions compared to 2020/21. Emissions from aviation represented 92% of total reported business travel emissions for Scottish universities in 2021/22. This increase follows the removal of most international Covid-19 travel restrictions. Reported business travel emissions for 2021/22 are 77% lower than 2018/19 reported emissions (pre-Covid-19).
- A 20% reduction in reported homeworking emissions compared to 2020/21, despite 3 further universities reporting this emission source. As one large institution reported staff and student commuting emissions as a combined total, EAUC Scotland are unable to determine the overall effect this reduced homeworking within the university sector has had on staff commuting emissions.
- A 66% and 77% reduction in Other Heating Fuels emissions and Biomass emissions, respectively, compared to 2020/21. These are attributed to the removal of temporary diesel generators and a biomass heating system in the university sector.
- A 55% reduction in waste management emission compared to 2020/21. The emission conversion factors for waste management have not significantly changed compared to 2020/21, and the number of institutions reporting waste emissions has stayed the same. As a result, this decrease is attributed to reduced waste generation across the sector due to continued virtual/home-based operations and teaching practices in the ongoing response to Covid-19.

	University	
	Sector 2021/22	Percentage
Emissions source	(tCO2e)	
Scope 1		
Natural gas	140,345	21.3%
Biomass	181	0.0%
Gas oil	719	0.1%
Other fuels	599	0.1%
Fleet vehicles	1,098	0.2%
F-gases	1,569	0.2%
Livestock & land use	11,624	1.8%
Subtotal	156,136	23.7%
Scope 2	-	
Grid electricity	58,356	8.9%
Purchased heat	1,550	0.2%
Subtotal	59,906	9.1%
Scope 3		
Electricity transmission & distribution	5,345	0.8%
Heat transmission & distribution	82	0.0%
Waste	719	0.1%
Water (supply and treatment)	669	0.1%
Business travel - car & van	1,083	0.2%
Business travel - rail	274	0.0%
Business travel - taxi	65	0.0%
Business travel - bus	64	0.0%
Business travel - ferry	55	0.0%
Business travel - air	13,958	2.1%
Hotel stays	901	0.1%
Commuting (staff and student)	26,798	4.1%
International student travel	36,168	5.5%
Domestic student travel	568	0.1%
Homeworking	5,954	0.9%
Supply chain	348,326	52.9%
Leased assets	1	0.0%
Investments	47	0.0%
Fuel- and energy related activities (WTT)	1,002	0.2%
Subtotal	442,077	67.0%
Total emissions (gross)	658,118	100%
Carbon sequestration		
Forestry	2,450	
Soil	5,599	
Total sequestration	8,049	
Total emissions (net)	650,069	

Table 2: Reported Scottish university sector emissions 2021/22

								Change
	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	since
Source of emissions	(tCO2e)	2020/21						
Natural gas	139,609	135,402	137,061	138,830	138,356	139,559	140,345	1%
Biomass	94	138	112	556	817	771	181	-77%
Other heating fuel	2,986	1,494	2,220	1,967	2,076	3,868	1,319	-66%
F-gases	612	1,124	1,022	1,553	1,197	1,790	1,569	-12%
Fleet vehicles	1,782	1,446	1,358	1,387	883	1,148	1,098	-4%
Land use & livestock	-	-	-	-	-	11,616	11,624	0%
Electricity1	156,003	135,848	105,050	86,697	71,521	64,220	63,700	-1%
Purchased heat	-	-	-	-	-	3,820	1,632	-57%
Waste management	3,076	2,288	2,052	2,287	1,791	1,592	719	-55%
Water (supply and treatment)	2,663	2,716	2,630	2,532	2,347	539	669	24%
Business travel	77,628	81,274	75,551	66,835	35,832	1,848	15,499	739%
Commuting	13,283	13,284	27,279	32,629	22,854	6,021	26,798	345%
Homeworking	-	_	_	-	_	7,468	5,954	-20%
International student travel	-	-	-	6,118	25,982	9,169	36,168	294%
Domestic student travel	-	-	-	-	380	256	568	122%
Supply chain	-	-	-	-	35,000	41,393	348,326	742%
Other	283	-	103	99	93	-	1,950	-
Forestry & soil carbon sequestration	-	-	-	-	-	- 8,049	- 8,049	0%
Total	398,017	375,014	354,440	341,491	339,127	287,028	650,069	126%

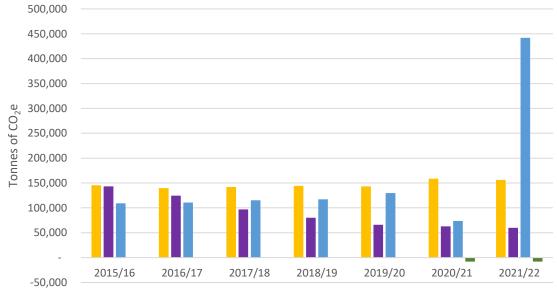
*Table 3: Comparison of reported Scottish university emissions between reporting periods*²

^{1*} Please note that "Electricity" includes emissions associated generation and transmission and distribution losses

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:

- Reported scope 1 emissions have increased by 7%;
- Reported scope 2 emissions have reduced by 58%; and
- Reported scope 3 emissions have increased by 305%.

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



■ Scope 1 ■ Scope 2 ■ Scope 3 ■ Sequestration

Scope 1 emissions for 2021/22 reduced slightly compared to 2020/21, primarily due to the temporary use of diesel generators and a biomass heating system being taken offline. Overall, scope 1 reported emissions remain relatively consistent over the past 7 years, with observed increases predominantly due to institutions expanding their reporting boundaries.

The 58% reduction in Scope 2 reported emissions since 2015/16 has been achieved through energy efficiency projects, increased onsite renewable energy generation and the decarbonisation of the UK electricity grid, which has reduced grid carbon intensity by 53% over the past 7 years. The 305% increase in Scope 3 emissions is due to expanded reporting of emissions by institutions.

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

Performance Metrics

As shown in Table 4, average university sector emissions during 2021/22 were 112.7 tCO₂e per million pounds of budget and 10.9 tCO₂e 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 and 2021/22

Performance metrics	2020/21	2021/22
Universities		
Budget (tCO2e/£m)	65.7	112.7
Employees (tCO2e/FTE)	6.1	10.9

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 within PBCCD Reporting to improve the quality of the performance metrics.

Summary & Recommendations

2021/22 represents the seventh mandatory year of the Public Bodies Climate Change Duties Reporting for Scotland's universities. Headline trends and recommendations to note:

1. Total Reported Emissions vs Improving Reporting Quality

Whilst there has been a 126% increase in reported net emissions in 2021/22 compared to 2020/22, this is primarily due to increased quality of reporting by several universities. This should be viewed as a positive development in line with Scottish Government expectations. Previous reporting years should be viewed as having significantly under-reported sector emissions, particularly for scope 3 emission sources.

2. Priority Area 1: Expanding PBCCD Reporting

Whilst the quality of reports has improved again for several universities, the sector as a whole has not significantly improved the scope of reported emissions compared to 2020/21. This is despite the Scottish Government guidance for the public sector coming into play for the first time in 2021/22's reports. As a result, there is a significant gap between current reporting and the expectations set out by Scottish Government. All universities should ensure that all relevant emission sources are included in 2022/23 PBCCD reports to be compliant of the guidance. A complete and transparent emissions profile for an institution will also support better informed decision-making for reducing emissions.

3. Priority Area 2: Natural Gas Emissions

The university sector has made minimal progress in reducing absolute emissions from natural gas. Over the past 7 years reported emissions from natural gas have increased by 0.5%. With the Scottish Government expectation of zero direct emissions from public body estate buildings by 2038, universities and the sector must focus efforts to understand, reduce and decarbonise heating emissions.

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Business travel emissions have rebounded from 2020/21's reported 1,848 tCO₂e to 2021/22's reported 15,499 tCO₂e. This remains significantly below pre-Covid emissions of 68,526 tCO₂e. The sector and supporting sector agencies should look to

lock-in changed travel habits and ensure emissions from business travel do not continue to rise in future reporting years.

5. Priority Area 4: Supply Chain Engagement

Supply chain emissions represent 53% of reported emissions for 2021/22, despite 58% of Scottish universities not reporting this emission source within their PBCCD return. The sector should proactively engage with their supply chains to improve sustainability understanding and action. Whilst it is recognised that with the current spend-based emission calculator tools available to the sector for monitoring supply chain emissions the impact of institutional actions will unlikely achieve an observed emission reduction, supply chain engagement is an essential sustainability leadership action and can be reported within PBCCD reports.

6. EAUC Scotland Supporting the Sector

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. EAUC Scotland are also working with key stakeholders to develop new tools, guidance and sector leadership to tackle key emission areas. Upcoming activities will include:

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Priority actions for key university stakeholders:

1. Actions for senior leaders:

- a) ensure robust and extensive institutional monitoring systems are in place to capture and report emissions from all relevant emission sources;
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 identify and address data and knowledge gaps for PBCCD submissions;
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- c) use frameworks and tools such as EcoVardis to review supply chain sustainability credentials alongside wider priorities (e.g. modern day slavery)



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