



EAUC Scotland Public Bodies Climate Change Duties Overview Report

2022 College and University Submissions
Analysis & Recommendations

June 2023

Contents

EXECUTIVE SUMMARY	3
INTRODUCTION	3
REPORTING QUALITY	7
ANALYSIS.....	9
PERFORMANCE METRICS	14
SUMMARY & RECOMMENDATIONS.....	14

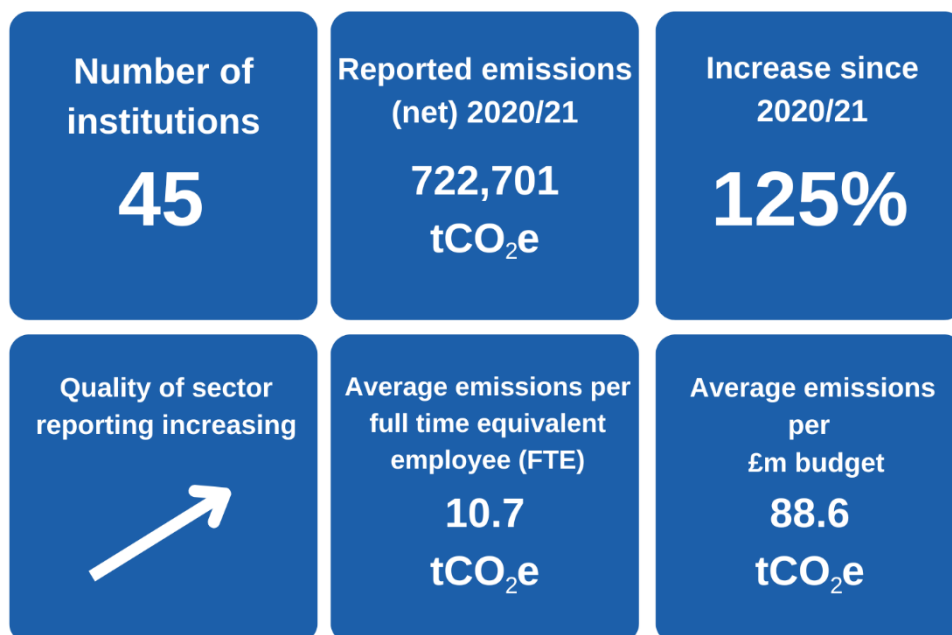
Executive Summary

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

Reported net greenhouse gas (GHG) emissions for the Scottish college and university sector during 2021/22 were 722,701 tonnes of carbon dioxide equivalent (tCO₂e). This includes 730,750 tCO₂e gross reported emissions and 8,049 tCO₂e reported carbon sequestration. Total reported net emissions increased by 125% since 2020/21, mainly due to increased reporting of Scope 3 emission sources (primarily supply chain and international student travel 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 59% since mandatory reporting began in 2015/16.

As the FHE sector fully meets the expectations set out in the [Scottish Government's Public Sector Leadership on the Global Climate Emergency](#), 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 10.7 tCO₂e and average emissions per million pounds of budget were 88.6 tCO₂e.

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 commuting. The FHE sector is a leading example of best practice reporting in the Scottish public sector; however, there remains gaps in institutional target setting and reporting against the latest Scottish Government guidance.

Key recommendations for the sector include:

1. Expanding PBCCD Reporting

Whilst sector reporting has improved again over the past year, there remains a gap between current reporting and the expectations set out by Scottish Government. The sector should ensure that all relevant emission sources are included in 2022/23 PBCCD reports to be compliant with the guidance.

2. Priority Area 2: Natural Gas Emissions

The sector has made minimal progress in reducing absolute emissions from natural gas. Over the past 7 years emissions from natural gas have reduced by only 0.7%. With the Scottish Government expectation of zero direct emissions from public body estate buildings by 2038, the sector 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 1,988 tCO₂e to this 2021/22's 16,063 tCO₂e. This remains significantly below pre-Covid 2018/19 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 52% of reported sector emissions for 2021/22, despite only 35% of institutions reporting this emission source within their PBCCD return. The sector should proactively engage with their supply chains to improve sustainability understanding and action.

Priority actions for key college and 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;
- d) 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 45 Scottish institutions 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 [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. 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 [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 and the Committee of Scottish [university] Chairs 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 emissions associated with premises energy consumption, 93% are reporting waste emissions, 93% are reporting water emissions, 89% are reporting homeworking emissions and 87% are reporting business travel 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	45	100%	-
Waste	42	93%	-
Water	42	93%	↑
Home working	40	89%	↑
Business travel	39	87%	↑
Fleet vehicles ¹	26	58%	↓
Supply chain	16	36%	↑
F-gas	14	31%	↑
Staff commuting	12	27%	↑
Student commuting	7	16%	↑
International student travel	4	9%	↑
Domestic student travel	2	4%	↑
Land use & livestock	1	2%	-
Leased assets	1	2%	New source
Fuel- and energy related activities (Well-to-Tank)	1	2%	New source
Investments	1	2%	New source

¹ In 2020/21 28 institutions reported fleet vehicle emissions. The reduction in fleet reporting is likely due to the transition to electric vehicles (emission reporting then moves to grid electricity consumption)

The quality of the reports has improved again this year and many institutions have expanded their operational reporting boundaries to include new emission sources for the first time. This included:

- Twelve institutions adding supply chain emissions;
- Six institutions adding homeworking emissions;
- Four institutions adding commuting emissions;
- Two institutions added international student travel emissions;
- One institution added domestic student travel emissions;
- One institution added water emissions;
- One institution added fuel- and energy related activities (well-to-tank) emissions;
- One institution added investments emissions;
- One institution added leased assets emissions.

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. The next sector PBCCD Peer Review session will be 14th November 2023 (online).

Analysis

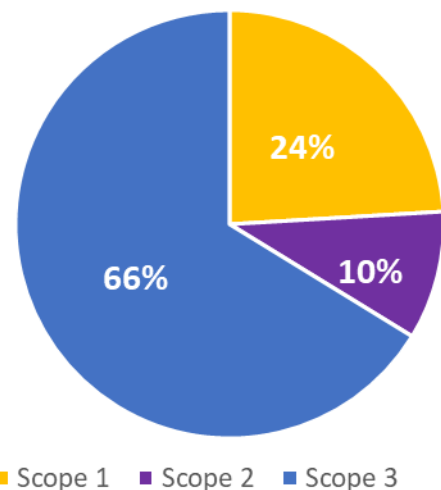
Total reported gross emissions from the Scottish college and university sector in 2021/22 were 730,750 tCO₂e.

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 for 10% of the total and Scope 3 sources accounted for the remaining 66%.

The majority of reported emissions arose from:

- Supply chains – 392,449 tCO₂e (52% of total reported emissions)
- Natural gas – 157,922 tCO₂e (22% of total reported emissions)
- Grid electricity consumption – 69,400 tCO₂e (9% of total reported emissions)

Figure 2: Breakdown of emissions by scope



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

Between 2020/21 and 2021/22 total reported gross emissions for the Scottish college and university sector increased by 401,110 tCO₂e, or 122% 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 (for example homeworking, international student travel, supply chain and commuting) which should be viewed positively. If the FHE sector meets the expectations set out in the [Scottish Government's Public Sector Leadership on the Global Climate Emergency](#), 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 and marginal progress on reducing absolute emissions from natural gas and electricity consumption, respectively, between 2020/21 and 2021/22 reporting periods.

- A 22% reduction in homeworking emissions compared to 2020/21, despite 6 further institutions reporting this emission source. As more staff move back to working on-site, this has not been met with a noticeable increase in other emission areas (e.g. natural gas; electricity; waste; water), though it is expected to have contributed to the observed increase in commuting emissions (alongside more institutions reporting commuting emissions).
- A 51% and 72% 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 sector.
- A 44% 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.
- A 708% increase in business travel emissions compared to 2020/21. Emissions from aviation represented 88% of total report business travel emissions in 2021/22. This increase follows the removal of most international Covid-19 travel restrictions.

Table 2: Reported Scottish college and university emissions 2021/22

College and University Sector		
Emissions source	2021/22 (tCO ₂ e)	Percentage
Scope 1		
Natural gas	157,922	21.6%
Biomass	237	0.0%
Gas oil	1,600	0.2%
Other fuels	875	0.1%
Fleet vehicles	1,289	0.2%
F-gases	2,243	0.3%
Livestock & land use	11,624	1.6%
Subtotal	175,790	24.1%
Scope 2		
Grid electricity	69,400	9.5%
Purchased heat	1,565	0.2%
Subtotal	70,965	9.7%
Scope 3		
Electricity transmission & distribution	6,352	0.9%
Heat transmission & distribution	82	0.0%
Waste	1,028	0.1%
Water (supply and treatment)	753	0.1%
Business travel - car & van	1,360	0.2%
Business travel - rail	277	0.0%
Business travel - taxi	76	0.0%
Business travel - bus	77	0.0%
Business travel - ferry	62	0.0%
Business travel - air	14,211	1.9%
Hotel stays	901	0.1%
Staff commuting	17,848	2.4%
Student commuting	14,741	2.0%
International student travel	36,168	4.9%
Domestic student travel	568	0.1%
Homeworking	7,617	1.0%
Supply chain	380,825	52.1%
Leased assets	1	0.0%
Investments	47	0.0%
Fuel- and energy related activities (WTT)	1,002	0.1%
Subtotal	483,995	66.2%
Total emissions (gross)	730,750	100%
Carbon sequestration		
Forestry	2,450	
Soil	5,599	
Total sequestration	8,049	
Total emissions (net)	722,701	

Table 3: Comparison of reported sector emissions between reporting periods

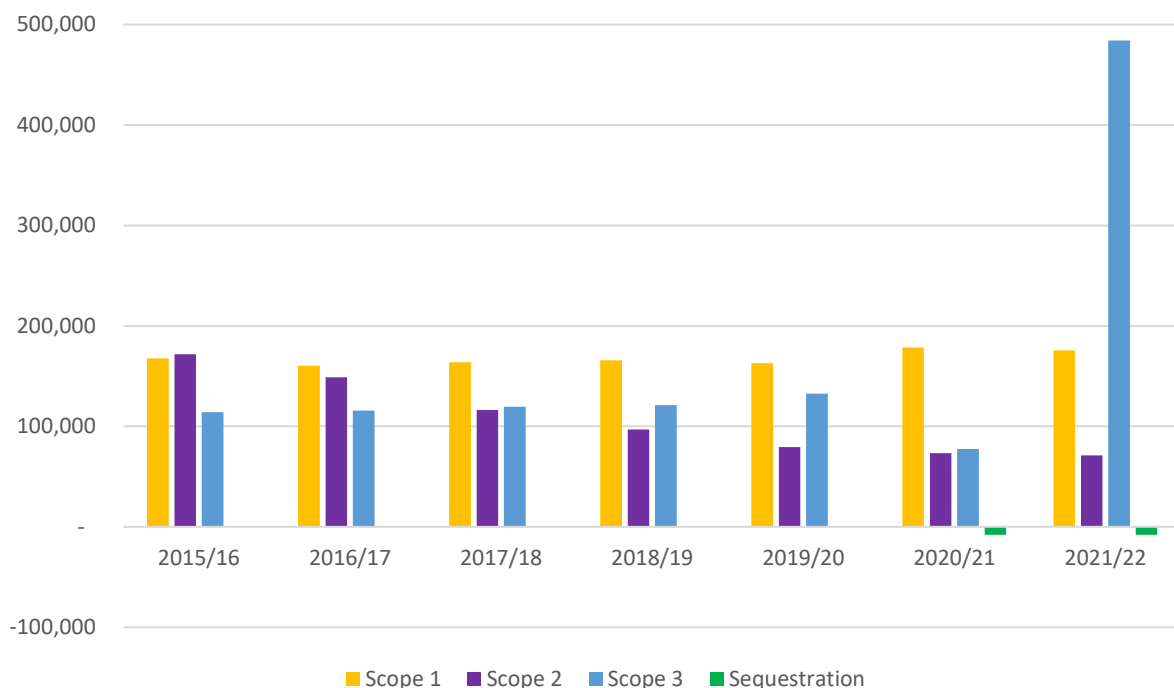
Source of emissions	2015/16 (tCO ₂ e)	2016/17 (tCO ₂ e)	2017/18 (tCO ₂ e)	2018/19 (tCO ₂ e)	2019/20 (tCO ₂ e)	2020/21 (tCO ₂ e)	2021/22 (tCO ₂ e)	Change since 2020/21
Natural gas	159,067	153,610	156,464	157,860	156,641	157,228	157,922	0%
Biomass	148	202	214	677	929	855	237	-72%
Other heating fuel	4,531	3,105	4,010	3,711	2,926	5,036	2,475	-51%
F-gases	612	1,124	1,022	1,764	1,341	2,546	2,243	-12%
Fleet vehicles	2,800	1,771	1,594	1,808	1,111	1,278	1,289	1%
Land use & livestock	-	-	-	-	-	11,616	11,624	0%
Electricity ¹	187,033	162,582	126,098	105,071	86,233	75,918	75,752	0%
Purchased heat	-	-	-	-	-	3,820	1,647	-57%
Waste management	3,804	2,949	2,674	2,878	2,068	1,831	1,028	-44%
Water (supply and treatment)	3,032	3,080	3,018	2,862	2,698	616	753	22%
Business travel	79,041	83,355	77,499	68,528	36,859	1,988	16,063	708%
Commuting	13,283	13,284	27,279	32,677	22,900	6,365	32,590	412%
Homeworking	-	-	-	-	-	9,722	7,617	-22%
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	380,825	820%
Other	283	-	103	99	93	-	1,950	-
Forestry & soil carbon sequestration	-	-	-	-	-	8,049	8,049	0%
Total	453,632	425,062	399,975	384,054	375,160	321,591	722,701	125%

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:

- Scope 1 emissions have increased by 5%;
- Scope 2 emissions have reduced by 59%; and
- Scope 3 emissions have increased by 325%.

Figure 3: Comparison of reported Scottish college and university emissions broken down by scope between reporting periods



Scope 1 emissions for 2021/22 reduced slightly compared to 2020/21, primarily due to the temporary use of diesel generators at one institution being taken offline. Overall, scope 1 emissions remain relatively consistent over the past 7 years.

The 59% 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 53% over the past 7 years. The 335% 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 Scottish college and university sector emissions during 2021/22 were 88.6 tCO₂e per million pounds of budget and 10.7 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 (tCO ₂ e/£m)	65.7	112.7
Employees (tCO ₂ e/FTE)	6.1	10.9
Colleges		
Budget (tCO ₂ e/£m)	43.0	71.0
Employees (tCO ₂ e/FTE)	2.9	10.5
FHE Sector		
Budget (tCO ₂ e/£m)	53.0	88.6
Employees (tCO ₂ e/FTE)	4.3	10.7

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

Summary & Recommendations

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

Headline trends and recommendations to note:

1. Total Reported Emissions vs Improving Reporting Quality

Whilst there has been a 125% increase in reported emissions in 2021/22 compared to 2020/22, this is primarily due to increased quality of reporting by institutions. Previous reporting years, particularly for Scope 3 emissions, should be viewed as significantly under-reporting sector emissions.

2. Priority Area 1: Expanding PBCCD Reporting

Whilst sector reporting has improved again over the past year, there remains a gap between current reporting and the expectations set out by Scottish Government. The sector 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 FHE sector has made minimal progress in reducing absolute emissions from natural gas. Over the past 7 years emissions from natural gas have reduced by only 0.7%. With the Scottish Government expectation of zero direct emissions from public body estate buildings by 2038, the sector must focus efforts to understand, reduce and decarbonise heating emissions.

4. Priority Area 3: Business Travel Emissions

Business travel emissions have rebounded from 2020/21's 1,988 tCO₂e to this 2021/22's 16,063 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 52% of reported emissions for 2021/22, despite 65% of institutions 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 qualitatively 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:

- 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 college and 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;
- d) 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)



Prepared and delivered by EAUC Scotland

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