Aberystwyth University Annual Carbon Management Performance 2021/22

1. Summary of Latest CO2 Emissions 2021/22 against the base year emissions from 2019/20

In 2019 the Executive Team and University Council agreed to a pledge to try to achieve carbon neutrality by 2030. Emissions have been quantified in line with the latest version of Welsh Governments reporting guidance. Table 1 below summarises our latest years emissions data against our base year of 2019/20.

We have significantly improved our data capture methodologies in the last FY, since engaging with our net zero strategy support. The scope of their work included provision for reviewing our operations to identify all applicable emission sources and develop suitable methodologies for each emission source.

Table 1. Summary of emissions (tCO2e) by category

Emission source	***2019/20 Base year***	***2021/22***	***Reduction/ Increase (%)***	***Comments***
Buildings - Electricity and gas, other fuels and water usage	*9,940*	*10,512*	*5% Increase*	*Increase mostly due to a significant increase in gas usage associated with low energy usage during covid lockdowns in base year and increased ventilation strategy in 2021.22.*
Travel and transport	*4,317*	*1,450*	*66% Reduction*	*Improved data capture Methodology*
*Agricultural Operations**	*4,300*	*4,300*	*No change*	*Adjusted base year data due to change in reporting methodology.*
Waste	*9*	*12*	*33% Increase*	*Increase in scope of waste data*
*Homeworking**	*267*	*267*	*no change*	*Added to change*
*Carbon sequestration - AU land**	*-2,828*	*-2,828*	*no change*	*Change to methodology*
Total Net emissions	***16,005***	***13,716***	*17% Reduction*	

*Adjusted base year data due to improved methodology or change in scope

Excluding supply chain emissions, 98% of our latest emissions come from building energy use, travel and agricultural operations. Total net emissions are down 17% since our base year. The reductions appear to be largely associated with improvements to travel data. However, energy use during our base year of 2019/20 was heavily reduced during Covid 19 related lockdowns, therefore masking significant improvements to energy efficiency in subsequent years. Increased gas usage (up 13%) associated with our covid safe ventilation strategy significantly increased our heating related emissions during 2021/22. To achieve a net zero estate by the end of academic year 2030/31, will require total emissions reductions of at least 83% over the next 9 years. Detailed SMART targets, KPIs and actions for each emission source will be outlined in our 2030 net zero strategy.

Table 2. Supply chain emissions

Emission source	***2019/20 Base year***	***2021/22***	***Reduction/ increase (%)***	***Comments***
Supply chain	*29,082*	*27,932*	*4% reduction*	*Emissions currently based on spend (£) by category.*

Supply chain emissions would account for >65% of our total emissions if included in our net zero scope. However, due to severe limitations on the available methodology used to quantify supply chain emissions (based purely on spend by category), it will not be possible to include this emission scope in our net zero 2030 target at this stage. We are currently developing more bespoke targets and actions for decarbonising the supply chain as part of our net zero strategy. Based purely on spend data, supply chain emissions have reduced by 4% since our base year.

2. Recently Completed Carbon Reduction Projects

REFIT Phase 2 - Solar PV Array in Fferm Penglais Fields

We have just completed works on a 2.5MW solar PV system at Fields above Fferm Penglais that will provide 25% of Penglais Campus annual electricity requirements. There are some outstanding grid connection works to be finished, but we expect the site to be fully generating by January 2023. The project will reduce our energy related CO2 emissions by >500 tCO2e per annum.

Greenhouse Lighting Projects

We have recently invested £120,000 in replacing inefficient lighting in some of our plant growth facilities with LED lighting. This is expected to reduce our emissions by 90 tCO2e per annum.

Transport Projects

To help with the transition to Electric Vehicles, we have continued to expand our Electric Vehicle charging network across our estate. We have also purchased several additional electric fleet vehicles. We have also increased the purchase cost limit on our Cycle to work scheme to better incentivise purchase of electric bikes.

3. Planned Carbon Reduction Projects

Tree planting Project

Subject to approval under the Glastir woodland creation scheme, we are hoping to plant up to 90,000 trees across our estate over the next 2 years. The proposal would increase carbon sequestration by 120 tCO2e per annum along with being a key component of our biodiversity enhancement activity.

REFIT Phase 3

Working with our REFIT contracted partner 'Vital Energi', we have just begun the process to develop a feasibility study for a 3rd phase of large-scale decarbonisation activity.

Aberystwyth Town District Heat Network

Recognising the difficulty of decarbonising building heating (gas) related emissions which account for 31% of our total emissions, we have just completed a high level feasibility study looking at heat electrification through a district heat network. We have recently been liaising with nearby public sector organisations (Hywel Dda, the National Library, and Ceredigion County Council), who are all supportive of the project. We are now looking to take the feasibility study through the various design and business case approval processes.