Carbon Management Plan

August, 2025 – Rev2025-1

University of East Anglia
Prepared by: Craig Mills – Energy Manager
Approved by: Matthew Bray – Head of Sustainability

Carbon Management Plan – University of East Anglia

Revision

Revision No.	Date	Prepared by	Approved by	Description
2025-1	15/08/25	C. Mills	M. Bray	First issue

Executive Summary

This document sets out how the University of East Anglia will achieve the energy and carbon emissions objectives and actions from its Environmental Sustainability Strategy 2030. The Carbon Management Plan succeeds the previous '2015-2020 Energy and Carbon Reduction Plan' and the '2020 Net-zero UEA' plan and is focused on actions between 2025 and 2030.

Contents

About the Carbon Management Plan

The intention of this plan is to set out the actions required to close the gap between UEA's current level of greenhouse gas emissions and its net-zero targets.
This requires a good understanding of all sources of emissions from the university's operations and the level of savings that can be associated with individual interventions. Whilst UEA can comprehensively calculate its scope 1 & 2 emissions, there are still some gaps in our scope 3 data, which we are working to resolve.
UEA's net-zero plans are continually evolving and the level of detail contained within this document will be iteratively improved as the university confirms the specifics of its decarbonisation actions. Therefore, this should be considered a 'working' document, which will be continually updated as further information becomes available and uncertainties are eliminated.

Key Targets

The university has committed to the following emission reduction targets, which were calculated by the Tyndall Centre for Climate Research to be consistent with global efforts to limit planetary heating to 2°C.

- A reduction in campus emissions (Scopes 1 & 2) of at least 80% by 2030 against the 2015 baseline of 25,360 tCO2e.
- Net zero emissions (Scopes 1, 2 & 3) by 2045 or earlier
- Not relying on offsetting for Scope 1 & 2 carbon emission targets

Governance

Sustainability at UEA is overseen by the Sustainability Committee, who act as a steering committee on behalf of the Executive Team, for Sustainability, Biodiversity and Net-Zero Carbon strategies across departments.

Responsibility for delivering the sustainability objectives set out in the 2030 strategy sits under various Implementation Teams, each covering a distinct aspect of sustainability, accountable to the committee.

Figure 1 – Sustainability Implementation Team structure

Scope 1 Emissions

Implementation team responsible: Energy and Water
Baseline: 12,140 tCO2e (2015)
Target: 5,072 tCO2e (2030); 0 tCO2e (2045)

Emissions originating from combustion of fuel on site and in university-owned vehicles were as follows:

tCO2e	2014/15	2023/24
Natural Gas	12,047	12,858
Gas Oil	34.6	26.6
Vehicle Diesel	55.4	16.2
Vehicle Petrol	4.8	10.0
Total	**12,140**	**12,880**

UEA's district heating system, which supplies the majority of buildings on campus, is currently fuelled using natural gas-powered boilers and two CHP engines. The CHP engines also generate electricity at a cheaper rate than it can be purchased from the national grid, resulting in a significant financial saving for the university.

The remainder of gas is consumed in commercial and domestic boilers on campus, within buildings not connected to the district heating. This includes buildings off the main campus, such as the Village student accommodation and the Edith Cavell and Bob Champion buildings. There is also a small amount of gas used for catering and laundrettes.

The Energy and Water Implementation Team is responsible for decarbonisation of heating under the following workstreams:

1. Electrification of heat sources
2. Optimising operation of the district heating system
3. Matching energy consumption to demand
4. Planning for a reduced campus space
5. Building fabric improvements

The short-term focus of the team is the decommissioning of the CHP engines – currently planned for 2028. It is estimated that this will reduce our onsite gas consumption by approximately 50% - even if the heat generation is replaced with gas

boilers. When combined with a renewable electricity supply, this action could deliver approximately 70% reduction in scope 1 & 2 emissions against the 2015 baseline.

The main barrier to the removal of the CHP is operating costs. Purchasing grid electricity is costly in comparison to that generated by the CHPs and their removal could result in electricity purchasing costs increasing by approximately £3M per year. Securing a lower-cost electricity supply through on-site renewables or a Power Purchase Agreement (PPA) is critical to ensuring the financial viability of CHP removal.

Scope 2 Emissions

Implementation team responsible: Energy and Water
Baseline: 13,220 tCO2e (2015)
Target: 0 tCO2e (2030)

tCO2e	2014/15	2023/24 (location-based)	2023/24 (market-based)
Electricity Imports	13,220	2,011	0

The emissions factor of the UK electricity grid is predicted to continue falling over the next decade as national electricity generation decarbonises. This would result in fewer scope 2 emissions if electricity consumption levels remain the same. In reality, the UEA's electricity consumption is likely to increase in the medium-term as the heat supply is electrified. UEA currently purchases Renewable Energy Guarantee of Origin (REGO) certificates for all imported power, making the university's electricity supply zero-carbon when reported using a market-based methodology.

UEA is striving to increase the amount of renewable energy generation on campus, with a potential 5MW solar PV project being evaluated, and are also investigating the option of an offsite PPA, which would provide a fixed price for our electricity supply and guarantee a zero-carbon supply.

Scope 3 Emissions

The UEA is continuously assessing and aiming to improve the reporting of its Scope 3 emissions. Responsibility for calculating a baseline and setting reduction targets against each scope 3 category falls under the relevant implementation team.
We currently have data on scope 3 emissions from:

- Staff commuting
- Business travel (university-owned vehicles only)
- Student commuting (term-time only)
- Waste
- Water supply and wastewater treatment

Staff Commuting

Implementation team responsible: Procurement

UEA contracted Mobility Ways to perform an employee travel survey and emissions calculation on its behalf in March 2025.

tCO2e	2024/25
Staff commuting	1,426

Business Travel

Implementation team responsible: Procurement

Emissions from university owned vehicles are reported in our annual HESA EMR report.

tCO2e	2023/24
Petrol and diesel vehicles	26.3

We currently have no data on emissions from non-university owned vehicles. Responsibility for collecting this data will fall under the Procurement implementation team, which is not yet assembled.

UK and International Student Travel

Implementation team responsible: Procurement

Emissions from student commuting were calculated based on responses to our 2023/24 travel survey.

tCO2e	2023/24
Student commuting	2.0

We currently have no data on student travel at term start/end.

Student Accommodation

Implementation team responsible: Energy and Water

Emissions from university-owned residential accommodation are calculated annually and submitted in our HESA EMR return.

tCO2e	2023/24
Residential Scope1 & 2 emissions	4,569

All university-owned accommodation is located on campus and in the student village opposite the Earlham Road entrance. The university has referral agreements in place with third-party accommodation providers to house students, should campus accommodation be oversubscribed. However, no students were referred under these agreements in 2023/24.

Waste

Implementation team responsible: Waste

Target: 16.7 tCO2e(2030)

Emissions from waste disposal and recycling are calculated annually for our HESA EMR return.

tCO2e	2023/24
Waste	18.6

The UEA has set a target to reduce total waste volume 10% by 2030, corresponding to a reduction in emissions of 1.9 tCO2e.

Water

Implementation team responsible: Energy and Water

Target: 80.7 tCO2e (2032); 68.8 tCO2e (2038)

Potable water is supplied to the campus and its satellite sites through the water main, operated by Anglian Water. Surface water drainage from the campus flows into the Broad and foul water sewerage is transported and treated through the Anglian Water sewer system. Emissions from water treatment and supply are submitted in our annual HESA EMR return.

	2018/19		**2023/24**	
	m3	**tCO2e**	**m3**	**tCO2e**
Water supply	316,698	108.9	318,305	48.7
Wastewater treatment	316,698	224.3	245,095	45.5
Total		**333.2**		**94.3**

Our primary method of reducing emissions from water supply and treatment is to reduce the quantity of potable water consumed. The Energy and Water implementation team is investigating rainwater and greywater reuse options. We will also be investing in our water metering during 2026 to ensure automatic half-hourly readings are available from all significant water meters, which should improve our leak detection capabilities and allow high-consumption alerts to be issued.

The UEA has set targets for reduction in potable water consumption of 14% by 2032 and 20% by 2038 against a 2019 baseline, in line with the UK and regional reduction targets. This is reflected in UEA's emissions target for water supply.

Goods and Services

Implementation team responsible: Procurement

Calculation of emissions from goods and services will fall under the responsibility of the Procurement Implementation Team, which has not yet been assembled.

Key Actions and Recommendations

No.	Action	Responsible Team
1	Continue to develop decommissioning strategy for the CHP engines	Energy & Water
2	Ensure all implementation teams are formed and operating	Sustainability Committee
3	Develop methodology for collecting scope 3 data in remaining categories	Procurement
4	Set 2030 targets for all remaining scope 3 categories	Procurement