HARPER ADAMS UNIVERSITY **Starred Item X**

Finance & General Purposes Committee

Sustainability Strategy Annual Update

PURPOSE: A report by the Environmental and Sustainability Manager on progress with the sustainability strategy and related matters.

KEY POINT: Progress made on potential campus net zero pathways (notably Max Fordham commission) but affordability remains challenging and with grid infrastructure challenges which present a significant hurdle to decarbonisation and electrification across the entire University.

EDI: inclusive design underpins delivery of the EDI strategy

ACTION: Members are asked to **NOTE** the report. **NO DECISION REQUIRED**

1.0 SCOPE 1 & 2 CARBON EMISSIONS AUG 22 – APR 23

Streamlined Energy and Carbon Report (SECR)

Scope 1 and 2 carbon emissions are comparable to the corresponding 2021-22 data despite the continued requirement for increased ventilation during the heating season (both opening windows and running air handling mechanical ventilation). The Cedar/STEP infrastructure has predominantly provided heat and power during the heating season and is reflected on increased biomass and gas (CHP) consumption. The remaining financial periods will complete the 2022/23 SECR report.

Energy Source	2022-23 YTD TOTALS		2021-22 tCO2e Figures	
	kWh	tCO2e	kWh	tCO2e
Scope 1 (tCO2e)				
Gas (CHP)	5,624,378	1,026.7	4,652,045	849.2
Gas	1,974,569	360.4	3,185,722	581.5
Company vehicles (red diesel)				
Company vehicles (white diesel)	141,690	37.8	344,339	93.5
Biomass woodchip	1,036,790	11.37	706,130	7.76
Biomass pellets	15,600	0.16	51,504	0.54
LPG	34,307	0.0	61,596	13.2
Kerosene (burning oil)	0	0.0	0	0.0
Scope 2 (tCO2e)				
Purchased electricity - location based	2,220,848	429.5	3,181,412	664.2
	11,048,181	**1,865.9**	**12,182,749**	**2,210.0**

2.0 DECARBONISATION ROADMAP

SUSTAINABILTY STRATEGY AT A GLANCE		
Priority Area	Sustainable Operations	
Objective	Achieve net zero by 2030 (scope 1 & 2)	Preparation for net zero (scope 3) by 2040
Delivery Mechanism	Develop a Decarbonisation Plan with emphasis on electrification/low carbon heating (as technology permits) and vehicle fleet management options	

In June 2022, Max Fordham completed their report of technically viable pathways to achieve Net Zero by 2030 on campus (scope 1 & 2 emissions). The following approaches were recommended:

- reduced heat demand through thermal fabric building improvement
- electrification of heat / DHN optimisation, and
- renewables/self-generation including recommendations for solar and wind generation and a (74kw) anaerobic digestion plant CHP (with elec. generation)

Putting the package of measures together, an anticipated campus operations carbon emissions reduction of around 95% from 2,223 TCO2e in 2022 to 75 TCO2e by 2030 could be achieved. Residual carbon emissions from biomass and grid electricity carbon emission factors could be mitigated by nature-based solutions or quality offsetting. Quantity surveyors, Currie & Brown, estimated programme cost to be in the region £29.1m dependant on the retrofit fabric programme applied.

Affordability of the recommendations remains a concern and a focus on grant funding opportunities and innovation and collaboration will need to a priority for the University.

2.1 PUBLIC SECTOR DECARBONISATION SCHEME (PSDS3)

The University applied to the third phase of the PSDS seeking to leverage some of the Max Fordham decarbonisation strategy recommendations. The application was successfully with funding awarded in January 2023 for the following project:

Fabric improvements and local gas boiler decommission/plantroom optimisation and installation of air source heat pumps across three campus buildings (Boughey, Princess Margaret Labs and Elizabeth Creak).

Total grant value	(£): 2,527,994	(ex. VAT)
Client Contribution	(£): 1,819,247	(ex. VAT)
Grant awarded	(£): 708,747	(inc. VAT)

Total annual carbon savings: 79t co2e

Following project mobilisation, it became apparent there were a number of issues that impacted on the project viability. This included a University increased peak power demand, necessary for decarbonisation/electrification, triggering DNO active demand management i.e. an ability to reduce or isolate power to the University HV network at any time. The need to decant Boughey or provide temporary accommodation along with a reduction in the overall Cedar heat demand/operating model resulted in the project monies be surrendered back to the grant operator, Salix Finance.

2.2 BOREHOLE WATER ABSTRACTION

Working with Carbon Zero, Estates have recently sought clarification on water abstraction licences with the Environment Agency. This work concluded that a total of 149,177 m3 of water can extracted for both potable water and farm/teaching and research use. There are no limitations on how this water may be used but abstraction totals are restricted across boreholes and the total aggregation must not exceed the 149,177 m3 volume threshold.

Abstraction licences are summarised below:

#	Borehole name	Purpose	Quantities m3/annum
1	Poorsland	PWS	24,000
		Spray irrigation storage (reservoir)	66,900
2	Boughey	PWS	33,277
		Agriculture	
3	NIPH	PWS	25,000
		Agriculture	
4	Newtown	PWS	76,650

An overview of the licences has been presented to the ES Water & Energy Group (24/5/23) where by it was reiterated that whilst there appears to be headroom in the abstraction totals to meet potable water and teaching and research water requirements, current and future campus demands must take priority.

An estate led working group has been convened to report on estimated campus water requirements across the estate and to review necessary control and reporting processes to ensure adherence with the licence requirements.

3.0 SUSTAINABLE TRAVEL SURVEY

SUSTAINABILTY STRATEGY AT A GLANCE		
Priority Area	Sustainable Operations	
Objective	Reduce the dependency on single occupancy car travel, by facilitating alternative modes of travel	Reduce emissions through fleet electrification and the promotion of sustainable business travel
Delivery Mechanism	Baseline staff and student commuting preferences through a sustainable travel survey	

A staff travel survey on commute to work, business travel and attitudes to sustainable alternatives was conducted in June 2022. A total of 160 responses were received. The survey revealed that:

- 41% of staff travel to the University 5 days a week, with 23% stating they work agilely and have no set work/travel patterns.
- The average journey time (regardless of mode) is up to 30 minutes for 67% of staff
- In a typical week, 93% of staff travel to and from work by car, with 88% as single occupancy vehicles, 3% as car drivers with a passenger and 1% as a car passenger

- Public transport, walking and cycling accounts for only 7% of staff travel

Further work required includes the development of a University Sustainable Travel plan cognisant of the new University Strategy 2030 and any emerging campus development masterplan. A student travel survey is commissioned and has been reviewed in conjunction with Student Services and the SU student travel representative and will be hosted during autumn 2023.

4.0 CARBON LITERACY

SUSTAINABILTY STRATEGY AT A GLANCE		
Priority Area	Sustainable Operations	
Objective	Embed sustainable and Responsible systems and behaviours across all Schools and Services	Reduce emissions through fleet electrification and the promotion of sustainable business travel
Delivery Mechanism	Conduct environmental sustainability awareness training for staff/students	

Carbon Literacy training is a powerful tool for increasing awareness and skills in environmental sustainability both individually and collectively. Following a successful small pilot in 2021 with 3 staff, another session was completed, in January 2023, with 7 staff from AHBW, FLAM, DVC office and Catering Services.

Subsequently, a workshop was held with the DVC to review the latest cohorts experience of the training materials and their relevance to our community and the agricultural and land-based sectors the University represents. Recommendations and amendments will be sought in conjunction with the Carbon Literacy Trust.

6.0 SUSTAINABLE DEVELOPMENT GOALS ACCORD

SUSTAINABILTY STRATEGY AT A GLANCE	
Priority Area	Leadership and Governance
Objective	Systematic institutional GAP analysis of current sustainability priorities, aspirations and objectives for future performance
Delivery Mechanism	Signatory to the SDG Accord

As a signatory to the Environmental Association for Universities & Colleges (EAUC) Sustainable Development Goals (SDG) Accord, the University has just completed its first-year submission. Returns from signatories are anonymised and included with an annual report. Signatories are also asked to submit a case study – the focus of which was the Harper Forward curriculum review aligned with SDG 4 – Quality Education.

7.0 STUDENT SWITCH OFF

SUSTAINABILTY STRATEGY AT A GLANCE	
Priority Area	Sustainable Operations
Objective	Embed sustainable and responsible systems and behaviours across all Schools and Services
Delivery Mechanism	Implement the behaviour change programme

New for 2022/23, the University completed the Student Switch Off campaign with SOS-UK. The campaign had a positive impact on overall residential student engagement:

- 242 students engaged in the campaign (30.6% of total residents)
- 106 students entered the climate quizzes
- 91 participated in online competitions, masterclasses and webinars
- 5 students were trained as volunteers

The campaign had a tangible impact[1] on electricity, carbon and finances:

- 16,682 kWh saved
- 4 tonnes of CO2
- £4,107 saved

Adam van Winsum
Environmental & Sustainability Manager
May 2023

[1] The above saving are calculated based on data from 2019/2020/2021 compared with the campaign year for 90 days occupancy (in October, November and February)