

Oxford Brookes Carbon Reduction Action Plan

Annual report 2023/24

Background

The carbon and energy reduction agenda is now extremely high profile and continues to gather pace. New targets and challenges both locally and nationally mean that we must increase our intensity of work and bring forward strategic decision making and associated work streams.

Our interim strategy brings Oxford Brookes in line with the UK Government's near term target of a 68% reduction in emissions by 2030 and supports the City of Oxford's ambitions to be net-zero by 2040. It also shows our commitment to alleviating the harmful effects of climate change by recognising a climate emergency within our proposed strategic vision. This interim target is seen as a pragmatic approach that can be largely delivered within the scope of existing initiatives, with the bulk of carbon savings coming from the proposed delivery of the Oxford Campus Vision.

We are currently in the process of producing a full net-zero strategy, with work on this having been delayed due to increased focus on delivering operational changes to reduce nearterm utility costs and emissions.

Key drivers

Further details on the following drivers can be found in our Interim Carbon Reduction Strategy¹

01. Legislative drivers and commitments to zero carbon - the UK is a key signatory of the Paris Agreement which aims to limit global warming to well below 2, preferably to 1.5 degrees Celsius, the UK Government has committed to a legally binding target of reducing all greenhouse gas emissions to net-zero and Oxford Brookes has committed to collaborate to achieve the City of Oxford's target of achieving net-zero carbon by 2040.
02. Financial - there continues to be a proactive need to reduce gas and electricity usage which will mitigate against energy price increases across its largest consuming sites.
03. Student expectations - students take environmental and global developmental issues seriously and are reported to influence their choice of place to study by 54%. 91% that agree their place of study should actively incorporate and promote sustainable development.
04. Maintaining performance and competitiveness with our peers. In the HE sector 53 UK universities have already committed to a net-zero target and declared a climate emergency. The sector average target date is 2035.
05. Benefits to the local community
06. Climate change adaptation

¹ <https://www.brookes.ac.uk/sustainability/carbon-and-energy>

VISION

Oxford Brookes recognises that urgent action is required to reduce or halt climate change and avoid potentially irreversible environmental damage resulting from it.

Our strategic goal is to reduce emissions in accordance with legislation and the requirements of the Paris Agreement, which aims to limit the rise of global temperature to no more than a 1.5°C above pre-industrial levels.

OBJECTIVES

In support of our carbon reduction aims we intend to achieve:

1. A reduction in Scope 1 & 2 emissions of 68% by 2030.
This reduction in emissions, from a 2010 baseline, relates to the operation of our buildings and infrastructure.
2. To become a net-zero carbon organisation by 2040, where only unavoidable emissions are offset.

In addition to this there is also a need to control utility and maintenance expenditure.

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ECS SLT sign off date: 12/10/2023

ANNEX 1 : Action Plan

Key – Target ■ = Achieved. ■ = Partially Achieved / in progress. ■ = Not Achieved

| Actions / Targets | Owner | Reporting on targets / actions | Agreed Actions / Target 2024 & 25 | Timeframe |
|--|--------------------------------|--|---|--|
| Strategic development | | | | |
| Heat Decarbonisation Plan | Gavin Hodgson / CPW | Achieved in 23/24 Phase 2 (£253k - Govt Funded) report complete. | Feeding into Oxford Campus Vision, investment plans (prioritisation model) Continue work with Oxford Energy Network and SSE. | July 2025 July 2025 |
| Scope 3 report | Gavin Hodgson / Michele Morley | Achieved in 23/24 SUMS report received and completed review of ProCHE code with FLS. | Integrate into Net-Zero Strategy and complete review of ProCHE code with FLS. | November 2023 |
| Net-zero Strategy | Gavin Hodgson | In Progress Draft completed during FY23/24 | Final version being reviewed in Autumn 24. | Autumn 2024 |
| Undertake monitoring of A&B block at Clive Booth | Paul Spencer | Achieved in 23/24 | £5k monitoring to develop business case for thermal store replacement with HIUs and/or | July 2024 - further analysis of findings |

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| | | | PhaseChange thermal stores and review of wonder opportunities. | over coming months. |
| ARUP RoHS Lighting Project | Gavin Hodgson / Capital Projects | Achieved 23/24 Developed scope of works that was tendered and subsequently award to ARUP - now being managed by Capital Projects. Project costs now known and scheduled within investment plans. | Maintain stakeholder involvement and ensure that the project prioritisation remains high on the university risk register. | Delivery will not occur before FY25/26 - |
| KPIs and dashboard | Gavin hodgson / Paul Spencer | Completed First draft or KPIs and dashboard. | Refinement around internal and VCG requirements | Autumn 2024 |
| Optimisation (energy efficiency and utility cost reduction) | | | | |
| Heating schedule ratification | Paul Spencer / Edward Boyle | Achieved in 23/24 Significant review of all areas and implementation complete | Continue with same plan for 23/24 - Clerici and some other areas to be adjusted based on use/feedback. | Sept 24 |
| Heating set points | Paul Spencer / Edward Boyle | Achieved in 23/24 Moved all of the estate over to 19degC | Rollout of heating extension buttons and also improvement of heating zone control at Harcourt Hill. | Sept 24 |

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| | | The adoption of 10degC overnight and improve optimised stop BMS functionality | | |
| TRV Setpoints | Paul Spencer | <p>Achieved in 23/24 All TRVs locked to setting '4' in academic spaces.</p> <p>Evaluated use of intelligent TRVs at Harcourt Hill and Clive booth C, L & M. Finish TRV replacements and lock downs at Marston Road, Fuller, Lloyd and Sinclair building.</p> | Deploy TRV lock shields to corridors to prevent overheating and also evaluate | Sept 24 |
| Geo-exchange Project | Gavin Hodgson / ERDA | <p>Achieved in 23/24 delivered 325,000 kWh of energy.</p> | <p>Continued optimisation and defects.</p> <p>New High Temp heat pump being designed and grand funding for digital twin model being applied for. Fully operational March 26.</p> | March 26 |

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| Vacant/mothballed buildings and areas of buildings | Gavin Hodgson | Not Achieved Buildings identified with poor utilisation, which have potential to be mothballed cannot be progressed due to the intermittent nature of building use. | Paper with VCG for the exit of Harcourt. | Ongoing |
| Further AHU optimisation (e.g. widening of temperature deadbands; reduced volume flow rates, increase CO ₂ ppm threshold) | Gavin Hodgson / Edward Boyle | Achieved in 23/24 Delivered to 11 AHU in John Henry Brookes Building | Rollout to all other areas. SFG20 improvement and new maintenance contract not likely to gain funding until FY 25/26 | Ongoing - resource dependent. |
| Room thermostat audit and replacement of faulty or poorly sited units (all areas of estate being retained) | Paul Spencer / Edward Boyle | In Progress | Improvements are Marston Road now funded and underway, other areas to follow suit as opportunity arrises. | Sept 2024 |

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| Hot water rationalisation/improvement | Gavin Hodgson | In Progress A number of options have been discounted during technical review, including for example, switching to point of use hot water supplies. | Continue with investigation and discussion as planned. | TBC |
| Insulation surveys and improvements | Gavin Hodgson / Paul Spencer / Edward Boyle | Achieved in 23/24 Improved pipework/valve lagging and insulation to a number of plant rooms on estate buildings being retained (academic and residential). In Progress Review case for improved/top up loft insulation (use of thermal imaging camera for identification of other fabric problems (all areas)) | More pipework lagging to be deployed and loft insulation project now procured for delivery in FY 24/25 | December 2024 |
| CHP performance and contractual review | Gavin Hodgson / Julian Penzo | CHP at Post-graduate centre now operational via new contract with Capstone. | Continue to monitor performance. | Ongoing |
| Solar PV performance | Paul Spencer | In Progress Ongoing monitoring in place, but requires a deeper dive. | Review performance of all Solar PV installations against expected annual generation profile | August 2024 |

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| Evaluate case for secondary glazing at Headington Hill Hall, Richard Hamilton and Gatehouse | Paul Spencer | Not Achieved Unlikely to satisfy Brookes payback criteria, therefore abandoned. | | Abandoned |
| Hydraulic maintenance | Paul Spencer / Julian Penzo | In Progress No action taken to date | Complete evaluation | May 2025 |
| Capital investment | | | | |
| Deliver Solar PV installations to Clive Booth N to X, Paul Kent and Clerici buildings 300kWp of PV which will generate some £90k worth of annual financial saving. | Gavin Hodgson / Capital Projects Team | Achieved in FY23/24 | | |
| Install PV on Centre for Sports | Paul Spencer / Capital Projects Team | Achieved in FY23/24 | | |
| Room thermostat replacements at Clive booth N to X | Gavin Hodgson / Capital Projects Team | Achieved in FY23/24 Tamper proof rooms stats being fitted | | |

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| Measurable energy smart electrical sockets trial | Gavin Hodgson / Capital Projects | Not Achieved Trial deployment of smart sockets to Buckley or Lloyd building (electrical sockets that provide greater efficiency and monitoring functionality) | Currently unable to find suitable location for deployment - will keep under review | Ongoing. |
| Utility cost management | | | | |
| Risk Management Tracking | Gavin Hodgson / Paul Spencer | In Progress Provide appropriate early warning system for excessive consumption / spend (e.g. via Optima Energy Management system and building performance league table). | Continue as planned, completion was delayed due to metering ecosystem being out to tender | December 2024 |
| Bill validation exercise | Gavin Hodgson / Paul Spencer / Paul Raimbach | Achieved in FY23/24 PCMG to undertake revenue recovery exercise on Scottish Power and Total Energies accounts which are now closed.. | No further action until Wheatley / Harcourt exit complete. | Review in FY25/26. |
| Quarterly Energy Management Advisory Group (EMAG) meetings | Gavin Hodgson | In Progress Ongoing commitment to review market performance and utility risk | EMAG meeting group to continue as planned. | Quarterly meetings |

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| | | purchasing policies and track spend on at least a quarterly basis. Achieved in FY23/24 Updated EMAG terms of reference. | | |
| Energy use recharging | Paul Spencer / Gavin Hodgson | In Progress No work undertaken yet. | Review of commercial contracts and energy use cost recharging – eg at Coop, Gather&Gather, Doctors, Dentists incl. appliances in situ to ensure costs recovered where appropriate/due. | December 2024 |
| Engagement | | | | |
| Information and behavioural change campaign. | Paul Spencer / Engagement Officer | In Progress No activity pending appointment of engagement officer | Define approach during FY 23/24 | May 2024 |

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