

## Utility Management Plan

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Next Review Due:	June 2028
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Approval route:	Director of Estates – June 2026

### 1) Introduction

This Utility Management Plan to 2028 contributes to one of the eight interconnecting themes within the Environmental Sustainability Strategy 2026-2028 which is the overarching document which sets out the University's core sustainability ambition, principles and commitments. The Strategy commits the University to:

*Reduce energy and water use by actively monitoring consumption, eliminating unnecessary usage and installing more efficient equipment and technologies*

This Plan details our utility consumption journey from a baseline of 2005-2006; and sets out the actions required to progress towards our sustainable consumption aims and associated targets.

The carbon emissions associated with utilities are presented within the Carbon Reduction Plan 2025-2028.

### 2) Strategic Objectives

This Plan is aligned to the University's Strategic Plan, Estates Strategy and Environmental Sustainability Strategy, the relevant agreed targets are:

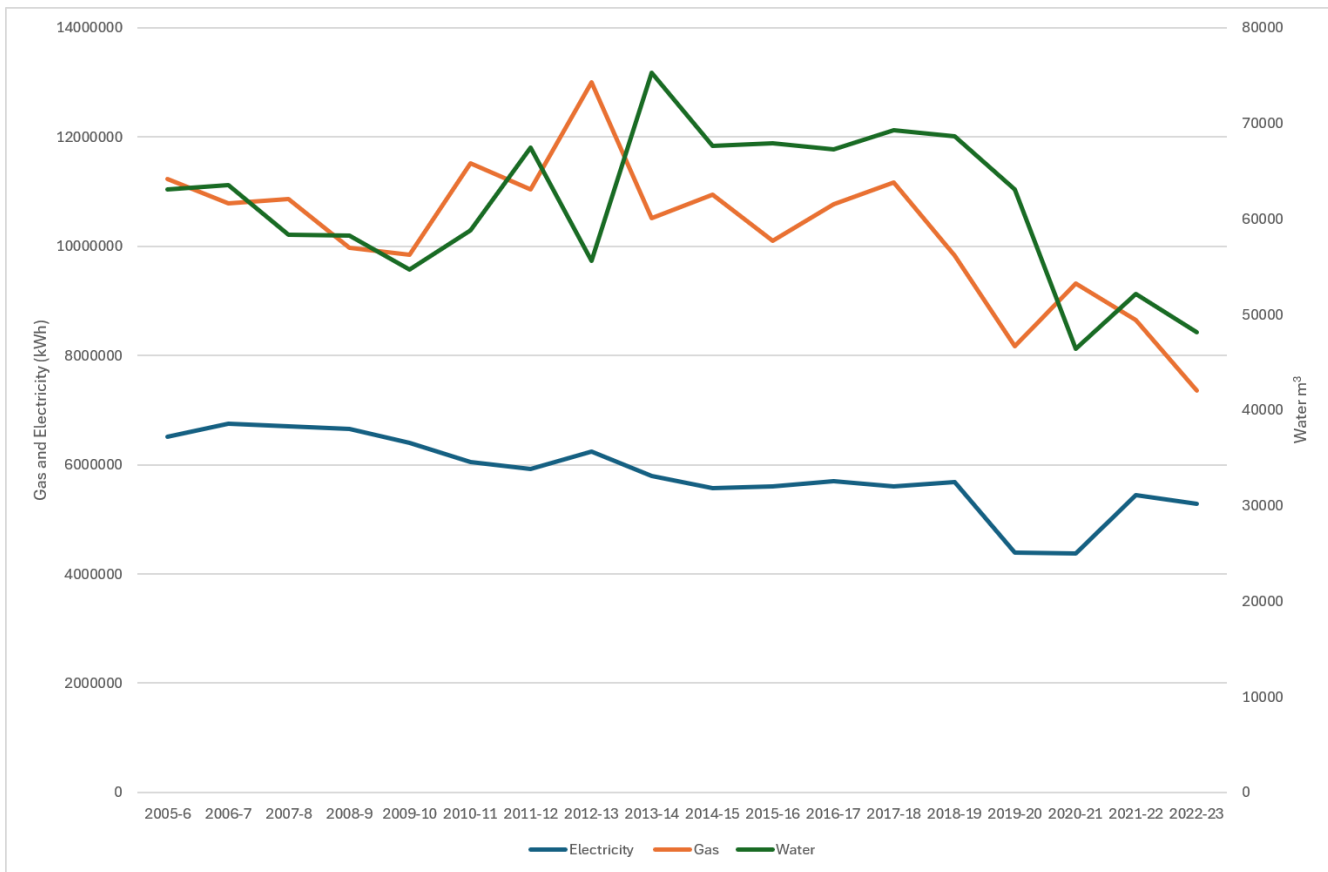
- Achieving Net Zero Scope 1 and 2 emissions by 2040
- Delivering a 25% reduction target in Scope 1 and 2 emissions by 2027-2028 from a 2022-2023 baseline
- Achieving Net Zero Scope 3 emissions by 2050; and reviewing this target following the establishment of a robust baseline
- Achieving a top 50 position in the People and Planet League Table by 2028
- Ensure we are financially sustainable, by amongst other things:
  - Ensuring our campuses and sites are well maintained and developed and used to support our strategic priorities creatively and effectively
  - Streamlining and implementing better processes and systems to improve effectiveness

Implementation of sustainable utility practices will enable costs (both financial and resources) to be reduced by using utilities more efficiently; eliminating unnecessary usage; installing more efficient equipment; and increasing engagement.

### 3) Progress so far (2005-2006 to 2022-2023)

We have collected utility consumption data since 2005-2006.

The reported utilities cover all University owned residential and non-residential buildings; but excludes rental properties which the University owns but has not financial or operational control.



In this period the usage of gas has reduced by 34.6%, electricity by 18.8% and water by 23.7% with unprecedented reductions during the covid years of 2019-20 and 2020-2021. However, the reduction journey, particularly for gas and water does not follow a smooth reduction path.

In this period, there has been much change:

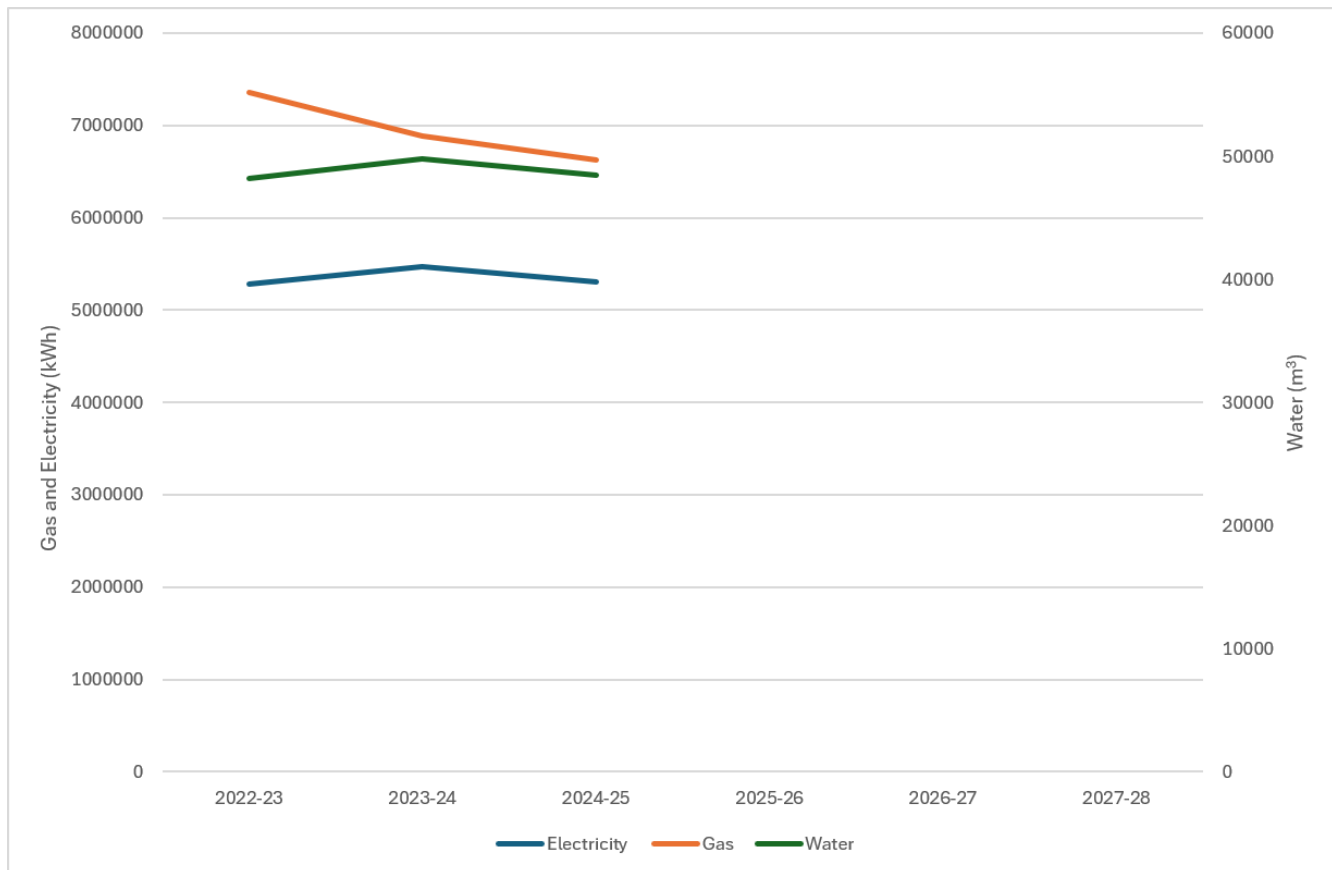
- GIA of the estate has increased by nearly 12,500m<sup>2</sup>
- A wide range of reduction projects have been implemented, including:
  - LED lighting
  - Building fabric upgrades (including roof replacements, double glazing, pipework insulation, TRVs)
  - Installation of non-concussive taps and waterless urinals
  - More efficient boilers and equipment
  - Awareness and Engagement including Student Switch Off and Green Impact (between 2012-2013 until covid)
- A centrally controlled building management system was installed in 2017-2018 to the majority of the campus whereas before each building had its own control system. The University's Head of Maintenance works with our external BMS engineers to fine-tune and refine the operation of the heating and hot water; including prioritising a demand-based control strategy
- Installation of sub-meters across the three utilities with half hourly readings for gas and electricity and hourly readings for water. These readings are used to identify any anomalies (particularly gas) in consumption, which is highlighted to the Head of Maintenance for further investigation.
- Installation of solar PV (from 0kWh in 2005-2006 to generating nearly 128,000kWh in 2022-2023)
- We were awarded two Public Sector Decarbonisation Scheme (PSDS) grants
  - PSDS Phase 2 for the decarbonisation of St Julies Halls of Residence in 2021-2022 with the gas fired heating being replaced by individually controlled electric panel heaters, solar panels, insulation of the internal facing external walls and replacing the original steel-framed windows with double glazing; this alone reduced the university's gas consumption by almost 8%.
  - PSDS Phase 3a was completed in 2022-2023 and saw the decarbonisation of Trinity Hall with the installation of an Air Source Heat Pump (ASHP) to replace the gas-fired heating system, double glazing replacing the steel-framed single glazed windows and the installation of solar panels.
- 19% of our buildings are now fully electric (2022-2023)

- Heating and Cooling policy was approved clarifying the arrangement and expectations for heating and cooling
- Space utilisation has continued to increase over the period with bookings prioritised into the most efficient buildings
- In October 2018 we appointed The Energy Consortium to procure our gas and electricity through a flexible contract (previously energy was procured on a three-year fixed basis).
- Water and wastewater are procured through The Energy Consortium since July 2021; This has increased accuracy as we now received monthly invoices and submit regular actual meter reads; the volume of wastewater has also decreased to 95% of the water consumption (previously 100%)

Whilst the University has already taken significant steps, we recognise that we do not have all the answers and that achieving net zero is not something that can be instantly achieved, but that it is a constantly evolving process and we will continue to review our practices and assumptions, implement projects (including resource efficiency, increased awareness and engagement and investment in mitigation technologies) and commit to a continued and focussed reduction.

#### 4) Progress so far (2022-2023 to 2027-2028)

A 2022-2023 to 2027-2028 reporting period has been chosen to align with the University's Strategic Plan, and the Environmental Sustainability Strategy aim to reduce our Scope 1 and 2 emissions by 25% and to have a complete Scope 3 baseline by 2027-2028.



Since 2022-2023, we have:

- Increased our building footprint by a further 1,251m<sup>2</sup> GIA
- Been awarded Public Sector Decarbonisation Scheme grant funding:
  - PSDS Phase 3a was completed in 2022-2023 and saw the decarbonisation of Trinity Hall with the installation of an ASHP to replace the gas-fired heating system, double glazing replacing the steel-framed single glazed windows and the installation of solar panels.
  - PSDS Phase 3b was completed in Angela Halls of residence in 2023-2024 where the gas fired heating and hot water system was replaced by individually controlled electric panel heaters and an ASHP, respectively; and internal wall insulation was installed to the external wall

- PSDS Phase 3c was completed in Gerard Manley Hopkins Hall in September 2025 where an ASHP replaced the gas-fired hot water system and individually controlled electric panel heaters replaced the gas-fired heating system
- Been awarded PSDS low carbon skills funding in 2024 for the creation of a Heat Decarbonisation Plan (HDP) across the whole of its estate (except fully electrified buildings with their own fiscal meter). Following detailed surveys of each building the HDP identified 198 projects with three main focusses: a) replacing gas-fired heating and hot water provision with electrical alternatives; b) improving the building fabric to ensure the correct sizing of electrical equipment; and c) reducing current electrical consumption. A major part of the HDP was the assessment of electrical capacity across the campus; this is a prerequisite to further electrification to mitigate the risk of infrastructure failure and avoid unbudgeted supply upgrades.
- Expanded the solar PV on campus, so by the end of 2024-2025 we had produced over 130,00kWh (however, several arrays were not working so this is expected to increase)
- Continued to replace lighting with LEDs, fine-tune the BMS on a demand-based strategy (considering the sub-meter half-hourly data and recommendations within the HDP), install energy efficient equipment and electrifying equipment, such as the pizza oven
- Continued to improve our space utilisation by concentrating activities together and prioritising the most efficient buildings
- Electrified 28% of our buildings

Over this period, the consumption of gas has decreased by 9.8% predominately from removing the gas fired systems and supply from Trinity and Angela Halls of Residence. The reduction in gas from PSDS Phase 3c (Hopkins) will be seen during the 2025-2026 year. Given the electrification of two buildings, it is surprising that the electricity consumption has only increased 0.4%. Water, however, has increased by 0.7%, which needs further investigation. Both electricity and water show a slight increase during 2023-2024, which is currently unexplained.

## 5) Consumption patterns

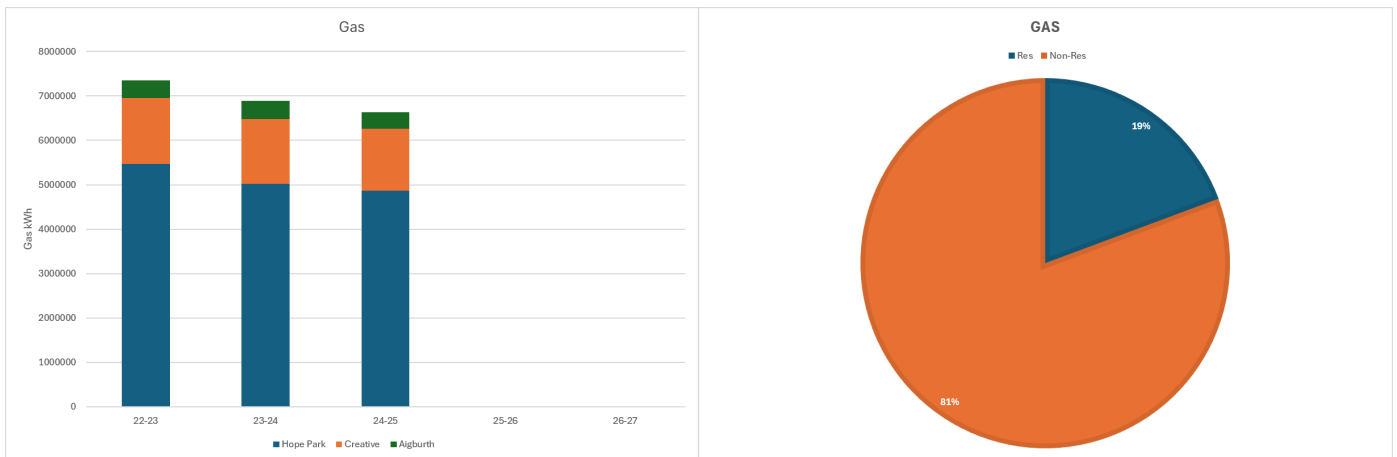
The university has four campuses: Hope Park is the main teaching and accommodation site; Creative Campus has both teaching and accommodation dedicated to the Creative Arts; Aigburth Park is a residential campus; and Plas Caerdeon is our outdoor recreation centre.

	<b>Building footprint (GIA m<sup>2</sup>)</b>	<b>Residential (%)</b>	<b>Non-Residential (%)</b>	<b>Electrified – Total GIA (%)</b>	<b>Electrified - Residential GIA (%)</b>
<b>Hope Park</b>	56,238 (65%)	47	74	22	71
<b>Creative Campus</b>	16,392 (19%)	15	21	44	100
<b>Aigburth Park</b>	12,355 (14%)	38	2	45	44
<b>Plas Caerdeon</b>	1,612 (2%)	-	3	100	-

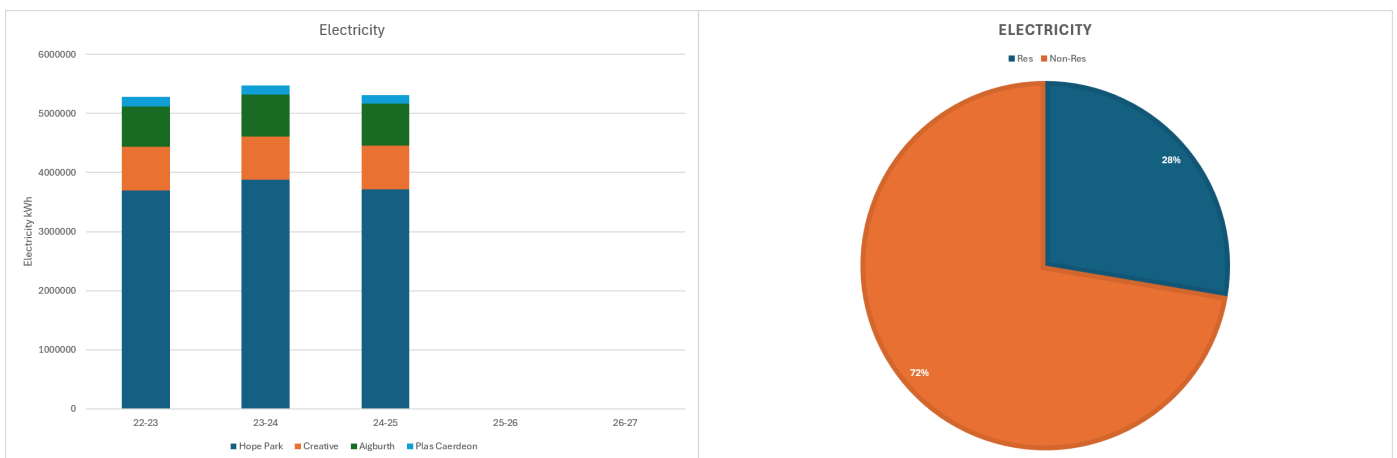
The consumption split between campuses is accurate (shown below), but the split between residential and non-residential (shown below) is estimated as not all buildings are sub-metered and some buildings have both residential and non-residential parts to them.

Consumption of utilities reflects the size of the estate with Hope Park consuming the most. Aigburth Park and Creative Campus are comparable except for gas which reflects the amount of electrification (though the GIA % does not show this; one of the Aigburth halls of residence only has gas fired hot water, the heating is via individually controlled electric panel heaters) and water which reflects the higher proportion of residential accommodation at Aigburth Park.

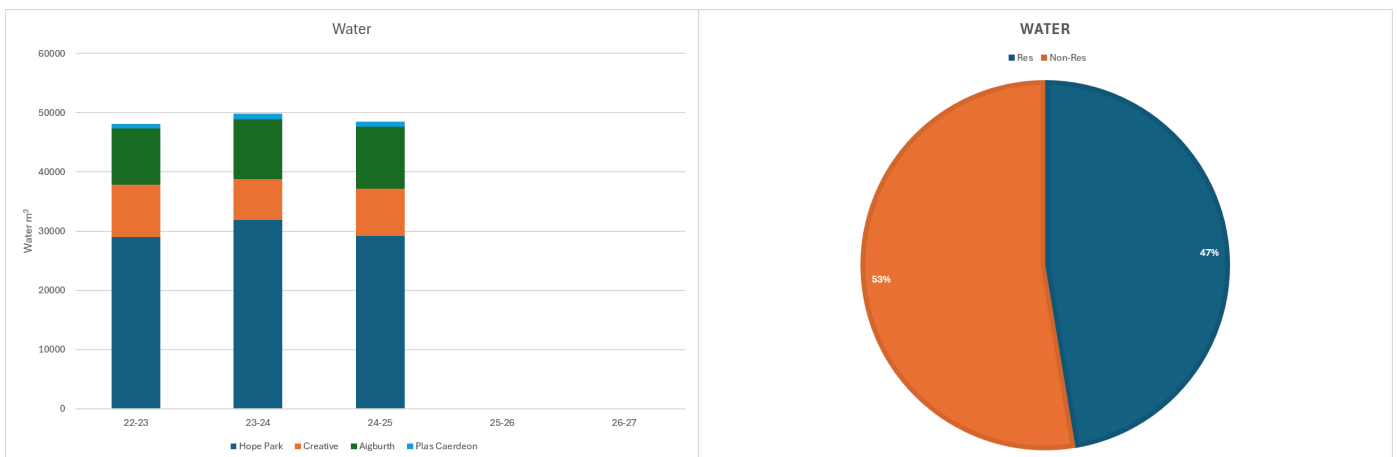
## Gas



## Electricity



## Water



### 6) Utility reduction pathway

Dependence on the emission sources is unavoidable, and the challenge is to continue our reduction journey whilst being mindful of our electrification journey. We will continue to identify, quantify and implement reduction projects across all areas of the estate; allocate financial and staff resources; and increase awareness and engagement across the University community.

Our journey will fall into three main paths:

1) **Avoiding and eliminating waste** – our principle focus must be on continually improving the utility efficiency of our estate and eliminating waste through:

- a. Control of heating, ventilation and cooling plant – linked to space usage and continued refinement of BMS controls
- b. Installation of sub-meters in outstanding buildings
- c. Interrogation of invoices and sub-meter data to identify waste
- d. Installation of energy efficient technologies; such as LED lighting,
- e. Passive features such as insulation and reducing solar gain
- f. Awareness and engagement activities, such as switch off campaigns
- g. Estates rationalisation to achieve higher space utilisation rates; including condensing activities into the most energy-efficient buildings particularly during ‘off-peak’ hours
- h. Incorporating these principles into all estate’s development works to ensure that buildings are refurbished holistically following a fabric first approach

2) **Decarbonising heating and hot water provision** – ASHP, electrical panel heaters, and point of use water heaters; roll out low carbon refrigerants

3) **Self-generation and storage** – solar PV, solar thermal, and associated battery storage, where practicable

To facilitate this reduction, we will action: 1) the Environmental Sustainability Action Plan, which details objectives, actions, KPIs and timescales required (see below); 2) the Heat Decarbonisation Plan (HDP). The HDP identified 198 projects phased to 2040 with an average annual cost £1.96M; however, this does not allow for the inflationary element of delaying project, or alternative technologies becoming available of the course of the HDP. This annual investment is currently unaffordable, especially in the broader Higher Education funding pressures and budgetary constraints.

Objective	Action	KPI	Completion deadline
Interrogate data from smart metering & monitoring systems to monitor consumption & prioritise reduction projects	- Interrogate data to monitor consumption & report where appropriate	- Energy kWh/m <sup>2</sup> & FTE - Water m <sup>3</sup> /m <sup>2</sup> & FTE	Ongoing
	- Investigate automation of reporting usage anomalies		
	- Gap analysis to identify buildings / utilities not currently sub-metered		
	- Submit business case to fund outstanding buildings		
Deliver projects (including resource efficiency, increased awareness & engagement & investment in mitigation technologies) to reduce consumption	- Provide business case for implementation of projects		Ongoing
	- Investigate external sources of funding		
	- Buy energy and water efficient equipment as standard		
	- Develop an Energy & Water Plan		2026-2027
Develop reduction targets & KPIs	- Create reduction targets for each utility		Ongoing
	- Monitor identified KPIs & add to if necessary		Ongoing
	- Develop an Energy and Water Plan		2026-2027
Explore onsite self- & low-carbon generation & storage technologies	- Conduct feasibility studies on self-generation	- kWh of renewable energy produced	Ongoing
	- Identify additional roof space for installation of PV		

	- Provide business cases for installation of self-generation & storage technologies	- % of renewable energy	
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Projects are continually being identified, quantified, refined, assessed (on a carbon reduction, cost and payback period basis) and implemented. The University’s investment will be phased to ensure that the ‘quick wins’ i.e. low cost, high impact, are implemented first and ensuring that the projects are integrated into planned maintenance and refurbishment works to maximise cost-efficiency. The priority of these projects are subject to change dependent on university priorities, future estate development plans and available internal finances and external funding opportunities.

**7) Delivery, monitoring, reporting and review**

Delivery of this Plan will be supported by robust monitoring, transparent reporting and the development of ambitious, inspiring and targeted action plans, standards and guidance. Actions will be prioritised based on impact feasibility, affordability and alignment with strategic risk.

The targets, progress against actions and KPIs will be monitored, reported and reviewed in line with the Environmental Sustainability Strategy and Carbon Reduction Plan.

The Sustainability Manager will maintain compliance with the Higher Education Statistics Agency’s Estates Management Record and other regulatory reporting.

This Plan covers the period 2026-2028 and will be fully refreshed aligned to the next University Strategic planning cycle.