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### Introduction

In support of the University's purpose and vision of Strategy 2030, and in alignment with the targets within the Environment and Climate Emergency Policy Statement, the adoption of a circular economy strategy will help enable the institution to lead meaningful action against the climate emergency and ecological crisis.

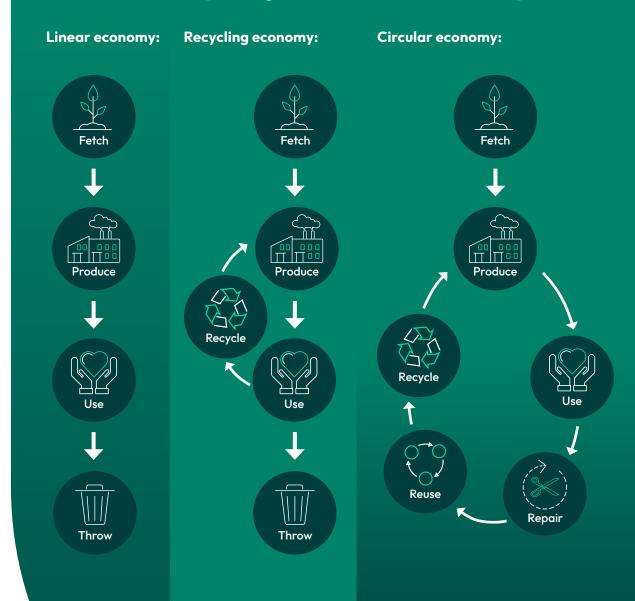
A <u>circular economy</u> (CE) is a new way of thinking about all that we buy and all that we use. It is a system where materials never become waste and nature is regenerated. Products and materials are kept in circulation through processes like maintenance, reuse, refurbishment, remanufacture, recycling and composting. It's an economic system that delivers better outcomes for people and the environment. It tackles climate change and other global challenges, like biodiversity loss, waste and pollution, by decoupling economic activity from the consumption of finite resources. The adoption of circular economy principles requires fundamental changes in thoughts, behaviours and actions.

The linear economy is based on 'take, make, waste' and is something we have been really good at since the Industrial Revolution. Unsurprisingly, it is no longer viable. The recycling economy, which has been adopted over the last couple of decades, was a step in the right direction at the time but is not a sustainable solution either.

The University, along with a great percentage of others, is currently somewhere between the linear and recycling economies. This Strategy will empower our movement away from the linear and recycling economies and establish a new system. It will support, encourage and enable fundamental change. It will help to create a new economy across our campuses that is designed to eliminate waste by designing it out, thereby reducing pollution, circulating products and materials at their highest value and regenerating nature. Its successful implementation will contribute positively towards the creation of a sustainable future, support the achievement of our sustainability targets, and have a positive impact on the delivery of our operations.

Enabling cultural change with extra resources, infrastructure and systems will contribute to an increased level of staff satisfaction and student experience. The model that we create will help to inspire and equip our community from the South West, the UK and globally to lead the charge in sustainable living, proving that a circular approach is achievable by all, and is imperative for a greener, healthier and fairer future.

### Linear vs recycling vs circular economy





# Context and related policies

### **United Nations' Sustainable Development Goals (SDGs)**

The 17 SDGs were established by the UN in 2015. SDG 12 – "Ensure sustainable consumption and production patterns" – is meant to ensure good use of resources, improve energy efficiency and sustainable infrastructure, provide access to basic services, create green and decent jobs, and ensure a better quality of life for all.

















13 CLIMATE ACTION











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### **UK Government plans**

In 2020, the Department for Environment, Food and Rural Affairs (Defra), Northern Ireland's Department of Agriculture (DAERA), the Welsh Government and the Scottish Government issued a joint policy statement:

"The UK is committed to moving towards a more circular economy which will see us keeping resources in use as long as possible, extracting maximum value from them, minimizing waste, and promoting resource efficiency. The Circular Economy Package (CEP) introduces a revised legislative framework, identifying steps for the reduction of waste and establishing an ambitious and credible long-term path for waste management and recycling."

In their Environmental Improvement Plan 2023, the Government commits to minimising waste, reusing materials as much as we can and managing materials at the end of their life to minimise the impact on the environment.

### **University of Exeter policies**

Strategy 2030 and Environment and Climate Emergency Policy Statement

Strategy 2030 states that: "We will use the power of our education and research to create a sustainable, healthy and socially just future" and that "[w]e will commit our resources – intellectual, physical and human – to increase skills levels and to support the region in becoming an international hub for

net zero, clean growth and nature recovery." One of the three main pillars of the Strategy is to lead meaningful action against the climate emergency and ecological crisis.

The University of Exeter declared an ecological and climate emergency in 2019. This Strategy is part of the response to Aim 3 of the associated Environment and Climate Emergency Policy Statement: "Demonstrate commitment to managing, minimising and mitigating the impacts from operations, activities, research, and education."

#### Waste Strategy 2016-2022

The University's previous Waste Strategy 2016-22 set out ambitious targets for the institution through the themes of waste reduction, increased recycling, and reporting for raised awareness. The Strategy was extended for a further year, allowing for the opportunity to undertake extensive consultations with our external and internal stakeholders and explore innovation within waste contract services. As the Strategy has been implemented over recent years, the University has improved its management of waste and mitigated expected increases in disposal costs with improved segregation.

The previous strategy helped to drive the University from a linear economy towards a recycling economy.

We now need to re-focus and create a new model, a new system for our sustainable future.



#### Other related policies

- Nature Positive Strategy
- Responsible Procurement Policy
- The Laboratory Efficiency Assessment Framework (LEAF)
- Sustainable Food Policy
- Certification to the ISO:14001
- Sustainability Design Guide
- Sustainable Transport Strategy

The University of Exeter is a signatory to the <u>Concordat for the Environmental Sustainability of Research and Innovation Practice</u>, which aims to ensure that UK Research and Innovation not only contribute to understanding how our planet is changing, but to ensure that they are environmentally sustainable in design and practice.

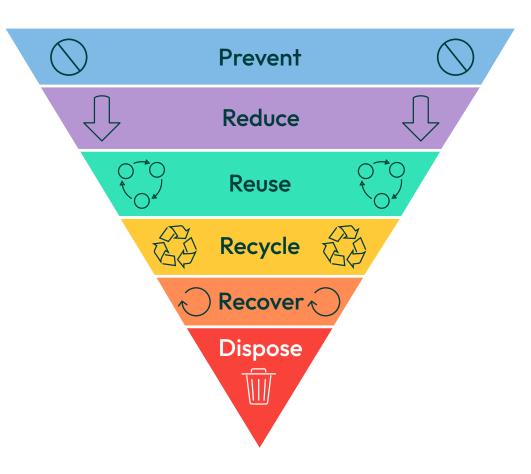
#### **External benchmarking**

- QS World University Rankings
- Times Higher Education Impact Ratings
- National Student Survey

## Scope

- Activities and services under the operational control of the University's campuses, including teaching and research activities, estates and facilities operations, and support services.
- All operational (day-to-day) waste streams collected by the University's contractors. Predominantly: paper, cardboard, food, plastics, tin cans, non-recyclable, glass, wood, plasterboard, metal, electrical, confidential media, washroom, clinical and chemical wastes.
- Construction wastes arising from refurbishment and construction projects (except asbestos, which has not been within the scope of our reporting to date).
- To prioritise and enable increased levels of reduce, reuse, recycle across campuses.

This Circular Economy and Sustainable Resource Management Strategy is focused on the reduction and ultimate removal of all items that are manufactured with the intention of single-use and which are then used as such. The University recognises the vital importance of the removal of single-use plastics to prevent and reduce pollution of all kinds, in particular from land-based activities, and this has individual focus within our <u>Single-use Plastics Strategy</u>. This strategy is supported with its own dedicated action plan.



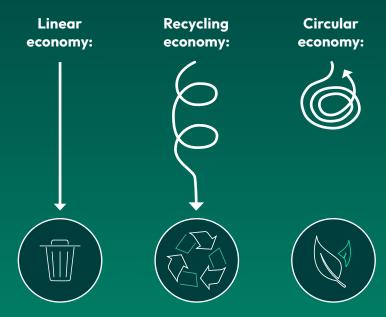
### Vision

To be a pioneering hub for circular economy practices.

### Goals

- 1. To lead meaningful action and integrate circular principles into all aspects of university life – from teaching and research to campus operations – enabling a new business as usual.
- 2. To support the creation of a circular economy by embedding circular principles, facilitating the elimination of avoidable waste and minimisation of the rest, the reuse of as much possible, and recycling of the remainder.
- 3. To develop sustainable resource management, reducing the negative impacts of our activities locally and minimising the overall impact on the environment.





## Principles

We will deliver the key principles of the circular economy within the University's activity. By embracing these principles, we can transition towards a more sustainable and regenerative economic system that promotes the wellbeing of both people and the planet.

### 1. Design for longevity and durability.

In a circular economy, products are designed to last longer and be more durable. This means using high-quality materials and considering the entire life cycle of a product, from production to disposal. By designing for longevity, we can reduce the need for frequent replacements and minimise waste.

### 2. Adopt a 'reduce, reuse, recycle' approach.

The 'reduce, reuse, recycle' mantra is at the core of a circular economy. It emphasises the importance of reducing consumption, reusing products and materials whenever possible, and recycling them at the end of their life cycle. This approach helps conserve resources, minimise waste generation and close the loop in the production and consumption process.

### 3. Promote collaborative consumption.

In a circular economy, collaborative consumption is encouraged. This involves sharing resources, such as tools, equipment and vehicles, among individuals and businesses. By sharing and utilising resources more efficiently, we can reduce the demand for new products and optimise resource utilisation.



### 4. Implement sustainable production practices.

Sustainable production practices are essential in a circular economy. This includes using eco-friendly materials, minimising waste generation during production processes and adopting cleaner production technologies. By implementing sustainable practices, we can reduce the environmental impact of manufacturing and ensure the responsible use of resources.

#### 5. Foster innovation and research.

A circular economy requires continuous innovation and research to develop new technologies, materials and business models. Innovation can drive the transition towards more sustainable practices and enable the development of circular solutions that address environmental challenges and create economic opportunities.

### 6. Engage stakeholders and promote education.

Engaging stakeholders, including businesses, governments and communities, is crucial for the successful implementation of a circular economy. Collaboration and knowledge sharing can help raise awareness, promote sustainable practices and drive systemic change. Education and awareness campaigns are also important to empower individuals and organisations to make informed choices and contribute to a circular economy.

## 7. Have targets that are SMART – specific, measurable, achievable, relevant and timed.

We will use SMART targets to measure the impact of our activities, understand what is working and what is not. We will leave space for context-specific innovation where measurement may be difficult and outcomes uncertain. We acknowledge that many aspects in the creation of a circular economy will be a 'work-in-progress', about which we will be transparent. We plan to deliver measurable improvement to the environment around the University and places where the University works or has influence.

## Objectives

The objectives of this Strategy aim to embed and enable the circular economy to thrive by designing out waste wherever possible, whilst significantly increasing the level of reuse and recycling.

To meet our goals and align to the principles, our objectives and targets are measurable and set within a 6-year horizon. They have been set within the context of the goals in Defra's Environmental Improvement Plan 2023 and Resources & Waste Strategy 2018, and are as follows:

- 1. Embrace innovation to identify opportunities for improvement.
- 2. Ensure that waste is considered a resource by all staff and students and managed accordingly.
- 3. Adopt the principles of responsible procurement.
- 4. Prevent and minimise waste production wherever possible.
- 5. Maximise reuse, recycling and composting in line with the waste hierarchy.
- 6. Maintain resource management practices consistent with best practice and user/business needs.
- 7. Minimise the environmental impacts associated with resource use.
- 8. Support the development of the estate, ensuring sustainable resource management is key to infrastructure, construction and refurbishment projects.
- 9. Contribute to the reduction of scope 3 carbon emissions.
- 10. Facilitate working with internal and external partners and the local community to ensure the environmental impact of the University is minimised within the city.

### Baseline

The total mass of waste generated from all activities, including construction and refurbishment projects, has reduced significantly over recent years.

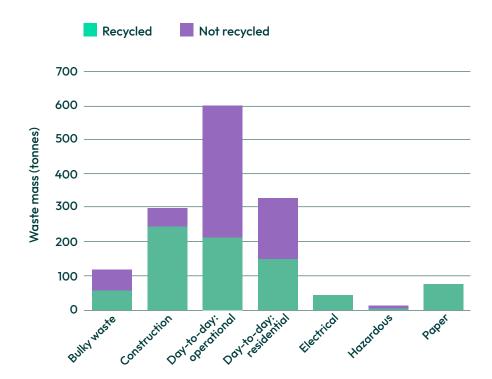
mixed glass

It should be noted that the level of construction waste has a high level of variation dependent on the size and scale of projects that are in process during any given year. At the end of the 2022/23 academic year, waste production stood at 1,477 tonnes, of which 786 was recycled and 690 was sent for incineration or landfill. Reuse figures stood at a total of 42 tonnes. of which 28 tonnes was donated to the British Heart Foundation and 14 tonnes re-purposed through the Warp It platform.

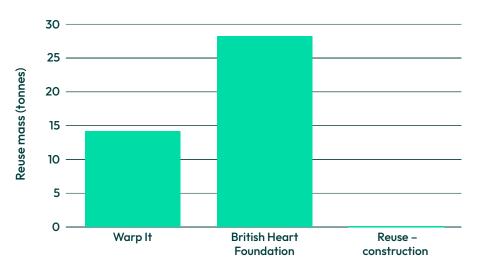
These baselines for waste and reuse have been established to enable us to measure progress against them. Items that are reused are not classified as waste and are therefore omitted from waste mass figures. Our data accuracy is also continually improving. The baseline data within this strategy may therefore differ slightly from figures that have been previously reported elsewhere.

A breakdown of individual treatment types and processing methods shows an overall recycling rate (including anaerobic digestion) of 53%. Non-recyclable waste is 47% of the overall, with 41% of this going to incineration and 6% to landfill. The overall level of our emissions has decreased to 71 tCO<sub>2</sub>e. Whilst this is an encouraging improvement to our operational performance, it is clear to see that our continued improvement will be achieved with a more sustainable approach towards our resource management with focus towards items and materials currently not recycled. It should be noted that there was a high level of estimation within previous datasets. The quality and accuracy of data has improved with an increased level of supplier engagement.

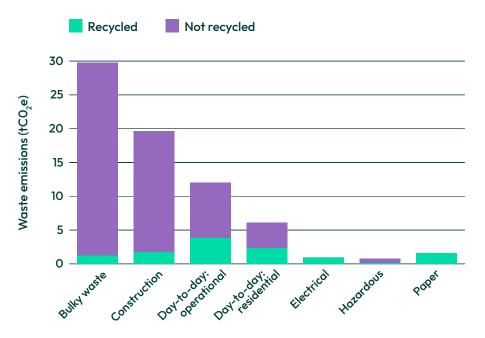
2022/23 waste mass (tonnes) for Streatham, St Luke's and Penryn campuses by waste group, split by treatment type:



2022/23 Reuse mass (tonnes) for Streatham, St Luke's and Penryn campuses



2022/23 waste emissions (tCO<sub>2</sub>e) for Streatham, St Luke's and Penryn campuses by waste group, split by treatment type:





### **Graph definitions**

- 'Construction' is defined as waste arisings from building and refurbishment works carried out by external contractors.
- 'Bulky waste' includes all waste that the University is responsible for and is removed from campus, either in skips or transported for disposal by our Facilities Management operations team in bulk.
- 'Electrical' covers all Waste Electrical and Electronic Equipment (WEEE), including IT equipment.
- 'Day-to-day: operational' is the waste arisings across campus from internal tri bins, external recycling bins, campus services catering kitchens and our retail activity.
- 'Day-to-day: residential' is all waste collected from halls of residence.
- 'Hazardous' is the total mass of our clinical, chemical and washroom wastes.
- 'Paper' is the paper collected from our Restore consoles across campuses.
- 'Recycled' includes all materials that are sent for open and closed loop recycling processes and food for anaerobic digestion (AD).
- 'Not Recycled' is all landfill and is a combination of waste that has gone to landfill and waste-to-energy incineration.
- UPP and off-campus private residences are not included in the data.

## Targets and KPIs

There will be a two-pronged approach to the achievement of our targets. Firstly, by using sustainable procurement methods to eliminate items from our waste streams at the point of purchase. Secondly, by adopting a circular economy model of working that will enable further continuous improvement.

Targets	Key performance indicators (KPIs)
Waste reduction – 47% reduction of total waste mass (tonnes) by the end of the 2029/30 academic year against a baseline of 1,477 tonnes in 2022/23.	Total waste mass (tonnes).
Increased reuse – 75% increase to the mass of items being repurposed or reused by the end of the 2029/30 academic year against a baseline of 42 tonnes in 2022/23.	Total reuse mass (tonnes).

Additional key performance indicators that will be used to monitor the success of this Strategy are:

- Waste mass generated per FTE (full time equivalent) staff and student (tonnes/FTE).
- Waste mass, construction (tonnes).
- Waste mass, non-construction (tonnes).
- Waste mass, food (tonnes).
- Percentage of waste sent to landfill (construction and non-construction waste) (%).
- Percentage of waste generated that is recycled or composted (construction and non-construction waste) (%).
- Percentage of waste generated that is food sent for anaerobic digestion (%).

## Delivery

The actions below will support Strategy 2030 as we continue with our commitment to producing world-leading research, to spearhead the transformation to a greener, healthier and socially just future for all.

We will work with internal and external stakeholders to identify and realise business improvement opportunities that are aligned to the Environment and Climate Emergency Policy Statement.

The University has an established centre with circular economy at its core; the Exeter Centre for Circular Economy (ECCE) is a leading interdisciplinary centre which integrates, consolidates, guides and shapes a global researchled agenda and convenes leading research and academic think tanks. It is aligned with the University of Exeter Business School (UEBS) research strategy and wider Business School growth strategy and aims to be at the forefront of the theoretical, validation and educational development of the emerging circular economy. ECCE will work to spearhead CE projects and co-create new research and educational initiatives at a strategic level across the University.

### Responsibilities

• Teams from within Commercial, Residential and Campus Services (CRC) have the overall responsibility for the operational management of the wastes on the Exeter campuses, and FXPlus have responsibility for waste contracts at Penryn Campus. However, the successful delivery of this Strategy will be accomplished with the collaborative participation of all stakeholders. This Strategy will help to enable faculties and departments to drive change through their own sustainable actions, activities and initiatives.



- The Sustainability team will be responsible for:
  - · The Strategy and its implementation, including facilitating activity by other teams.
  - · Collating information and reporting against the KPIs.



## Action plan

The initiatives set out a series of measures to encourage staff, students and visitors to adopt more sustainable habits and achieve the targets and objectives contained in this Strategy.

They will assist all faculties and departments to identify their individual areas of potential improvement, define opportunities, track progress and measure success. Students will be encouraged to participate in the improvement to our business as usual through involvement via learning, teaching and research. Greater levels of on-campus participation will be facilitated with the further development of internships, employability skills and volunteering opportunities.

Equipment purchased to enable a reasonable adjustment or specialist equipment sourced to support colleagues with a declared disability or health conditions would be exempt from the single-use restriction implied as part of this policy.

#### We will instil Prevent/Refuse into our business as usual:

- We will fully adopt the principles of responsible procurement, including the measure of whole life costs to ensure the consumption of items that have been manufactured for single use are removed from our environment.
- We will engage and work in partnership with suppliers from the construction industry to design out waste where possible from all building and refurbishment projects, encourage reuse and recycling, minimise recovery and pursue zero waste to landfill.



### We will lower the level of our waste significantly with the adoption of Reduce:

- We will consider our purchasing at all levels to ensure that we are only buying what we need, will make good use of, and are able to reuse or recycle when they become unwanted.
- We will minimise waste production wherever possible, by prioritising reuse or recycle.
- We will further develop our supplier management relationships to encourage innovation and best practice.

### We will bring the circular economy to life with Reuse:

- We will identify opportunities and develop solutions to ensure that all unwanted items are considered for reuse by others, including the potential for repair and refurbishment.
- We will continue to innovate and research and develop partnerships with other research centres and external organisations to maximise our opportunities for improvement.
- We will tender for contracts with waste processing suppliers that focus upon the reuse of our redundant equipment.

#### We will consider Recycle as our least favoured disposal option:

- We will only choose this option after all other higher-level options explored.
- We will encourage and foster individual and departmental engagement to enable innovation to thrive, with the identification and development of localised improvement opportunities.
- We will identify and utilise recycling routes that become available for unavoidable waste that is recyclable and/or compostable, such as food and its packaging.

#### We will lessen the environmental impact of Recover:

- We will ensure that the volume of items that need to be sent for energy recovery are targeted and driven down wherever possible.
- We will all accept the personal responsibility of aligning our individual actions to the waste hierarchy.

### We will continue to consider Dispose as an unacceptable process:

 We will continue to work with partners, suppliers and stakeholders to fulfil our desire for zero waste to landfill.





### Actions and responsibilities to meet the targets of the Circular Economy Strategy

**Timeframe:** Short = completed within 1 year,

Medium = completed 2-4 years, Long = completed 5-6 years.

	Action	Timeframe
1	Review the opportunity for the development of a business model that facilitates Product as a Service (PaaS) as an option within the procurement process.	Medium
2	Continue to integrate and develop Environmental, Social and Governance (ESG) criteria into procurement processes for contracts exceeding £50,000.	Short
3	Develop supply chain innovation and improvements.	Medium
4	Develop a pan-university asset register to enable the sharing and reusing of equipment.	Medium
5	Develop the prioritising of whole life costing in tender processes and contract management.	Medium
6	Evaluate the opportunity of integrating Environmental, Social and Governance (ESG) criteria into the procurement operations process involving contracts of value below £50,000.	Medium
7	Encourage innovational improvement in partnership with suppliers via the supplier relationship management process.	Medium

	Action	Timeframe
8	Provide circular economy (CE) training for staff through, for example, an online CE course; and access to the CE Masterclass provided by the Exeter Centre for the Circular Economy.	Short
9	Continue to collaborate with University Partners (Civic Uni Agreement) to identify the opportunity of shared facilities/resources/equipment.	Medium
10	Develop a programme of awareness and engagement that incorporates the CE principles with focus upon the linkage to all sustainability themes.	Medium
11	Engage and work in partnership with suppliers from the construction industry to design out waste where possible from all building and refurbishment projects. Encourage reuse and recycling, minimise recovery and pursue zero waste to landfill in alignment to the Sustainability Design Guide.	Short
12	Develop a programme of actions to include CE considerations within forthcoming commercial leases with external suppliers and University operated outlets.	Medium
13	Review the opportunity for the introduction of a beverage cup buy back/deposit scheme.	Short
14	Evaluate the opportunity for the ban of single-use hot beverage cups.	Short
15	Develop a programme of initiatives, activities and events with staff and students to reduce food waste, promote clothes reuse and recycling of halls of residence furniture and equipment.	Short
16	Develop a programme of actions with existing waste contractors to improve the performance of current recycling schemes and/or the identification of new ones.	Medium
17	Develop a circular economy for unwanted IT equipment to increase the opportunity of reuse and repair.	Medium
18	Explore the potential opportunities for the hire of equipment rather than purchase within research funding frameworks.	Medium
19	Review and update the Single-use Plastics Strategy.	Short
20	Review and evaluate emerging take-back schemes with existing and new suppliers.	Short
21	Evaluate the opportunity of shared equipment purchasing.	Medium
22	Review the opportunity for the sharing of existing equipment.	Medium

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	Action	Timeframe
23	Continue to develop our sustainable resource management practices on campus to reduce the level of non-recyclable waste by recycling where possible.	Short
24	Continue to develop the programme of initiatives that contribute towards the further removal of single-use plastics, food waste, and increased reuse opportunities within the evolving Sustainable Food Policy.	Short
25	Continue to identify the potential for processing compostable food packaging locally.	Short
26	Investigate the feasibility of compostable packaging as an anaerobic digestion feedstock.	Short
27	Evaluate the opportunity for food, green and packaging waste to be processed on campus by anaerobic digestion.	Medium
28	Further develop the scope and membership of the Warp It reuse platform.	Short
29	Continue to develop the British Heart Foundation partnership for wider participation and further increased waste reduction.	Short
30	Recruit a Sustainable Living Assistant to help develop and action the student reuse programme to include reuse and repair events, slow fashion, student recycling forum, awareness workshops and the Moving On project.	Short
31	Utilise the Student Campus Partnership for the recruitment of a circular economy focused intern to assist with the development of a student-related Waste A-Z, and other awareness campaigns.	Short
32	Continue to support and develop the Students on the Move project.	Short
33	Continue to develop the internal waste auditing programme.	Short
34	Develop the scope of Green Consultants projects.	Short
35	Review the opportunity to trial a repair cafe on campus.	Short
36	Evaluate the opportunity for a cycle and cycle equipment donation/exchange scheme.	Short
37	Investigate the feasibility of an off-campus Resource Hub to improve the level of sustainable resource management with increased opportunities for reuse, repair, re-purpose and recycle.	Short



## Governance, reporting and review

The Circular Economy and Sustainable Resource Management Strategy has been approved by the University Executive Board (UEB). It will be overseen by the Advocate Climate Taskforce (ACT) and the Climate and Environmental Crisis (CEC) Board, and its implementation will be managed on a day-to-day basis by the Sustainability team.

In-year reporting will be to ACT and the CEC Board. Annual external reporting will be undertaken at the end of each academic year as part of the University's year end sustainability report.

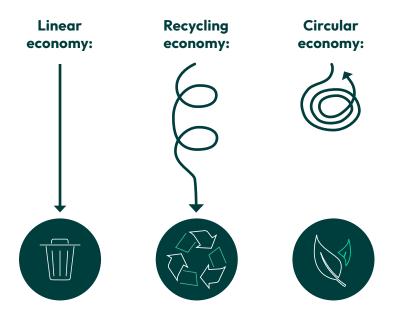
This Strategy will be reviewed after three years and updated as necessary. In the interests of continuous development and improvement there will be an online mechanism to enable students and staff to provide ideas. feedback and updates which will help refine the delivery plan.

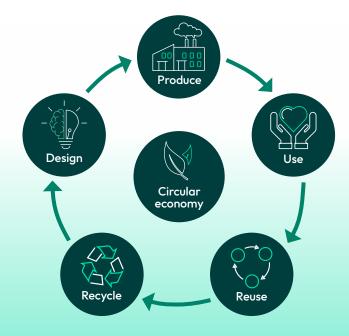
All of this will be tracked, monitored and assessed quarterly using our existing key performance indicators.

## Glossary

### **Circular economy**

In our current economy, we take materials from the earth, make products from them, and eventually throw them away as waste – the process is linear. In a circular economy, by contrast, we stop waste being produced in the first place.





The circular economy is a system where materials never become waste and nature is regenerated. Products and materials are kept in circulation through processes like maintenance, reuse, refurbishment, remanufacture, recycling and composting.

The circular economy tackles climate change and other global challenges, like biodiversity loss, waste and pollution, by decoupling economic activity from the consumption of finite resources.

### **Waste hierarchy**

The waste hierarchy ranks waste management options according to what is best for the environment. Since 2011, following the waste hierarchy has been a legal requirement for businesses and public bodies that produce and handle waste. The hierarchy is set out at Article 4 of the revised Waste Framework (Directive 2008/98/EC). See the full UK Government guidance on applying the waste hierarchy here.

In six levels, the waste hierarchy explores the possible management for waste types. In order of most favourable to least, the levels are:

**Prevention** – The most environmentally considerate way to manage waste is to produce less in the first place. Responsible procurement methods help to achieve success with end-of-life being taken into consideration.

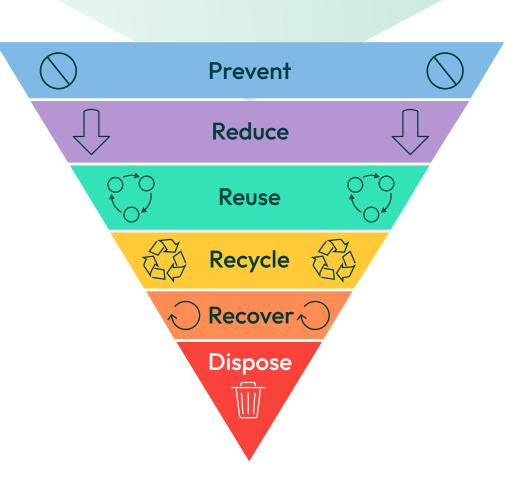
**Reduce** – Ensure that only what is needed is purchased. The whole-life costs of everything that is procured should be considered, assessed and accounted for.

**Reuse** – Waste producers should explore options for reusing materials. This process involves the checking, cleaning, repairing and refurbishing of products and materials for reuse by others.

**Recycling** – Recycling turns waste into new substances and products.

**Recovery** – Value can be extracted from waste even if it is not recycled. Energy recovery from incineration, for example, creates energy through the burning of waste; however, this does release harmful gases.

**Disposal** – Once all the above options have been explored, disposal is the final waste management method. Landfill and incineration (without energy recovery) are the alternatives, both with negative environmental impacts.



### Sustainability

### **Contact Us**

Please get in touch with the Sustainability team to find out more about our plans to lead meaningful action on the ecological crisis and climate emergency, and how you can get involved at <a href="mailto:sustainability@exeter.ac.uk">sustainability@exeter.ac.uk</a>

exeter.ac.uk/sustainability

