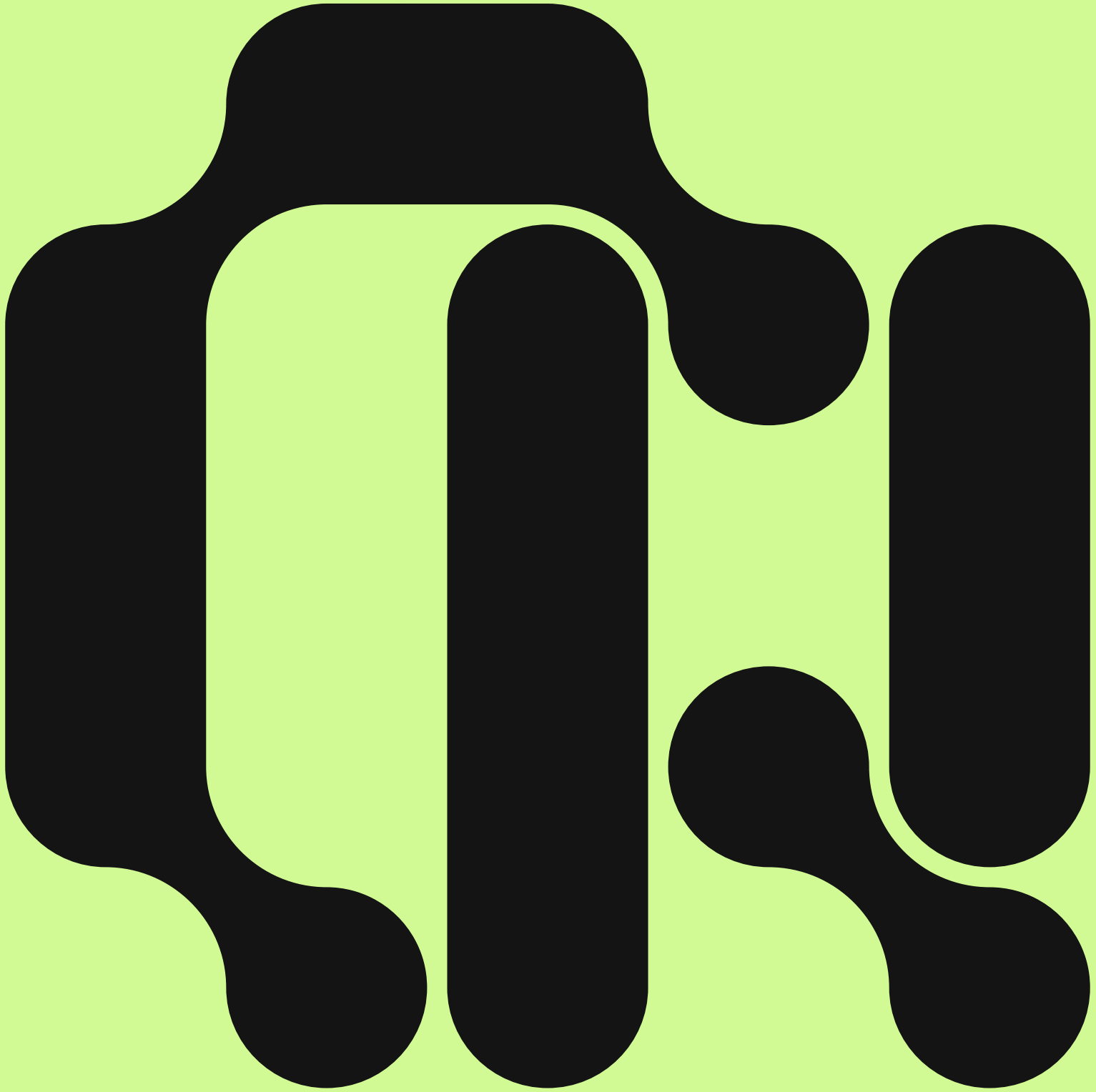


# Climate Action Roadmap 2030



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This document has been co-created by **UL Centre for Sustainable Futures & Innovation** and **UL Buildings & Estates**, in collaboration with strategic design partner **Saol**. It was created through an open and participatory process and has been approved by the University's Executive Committee. This document is intended to be used as a 'living document' – its contents will evolve as we embark on the collective journey toward becoming a Sustainable University.



[www.ul.ie/sustainability](http://www.ul.ie/sustainability)

Saol

[www.studiosaol.com](http://www.studiosaol.com)



[www.un.org](http://www.un.org)

“It is our responsibility to take bold action – to have the courage to explore the unknown and collectively pioneer a better path forward.”



**PROFESSOR KERSTIN MEY**  
PRESIDENT  
UNIVERSITY OF LIMERICK

## Foreword

The rapid pace of societal growth has caused us to exceed many of Earth's planetary boundaries. We are now living in a deficit – consuming resources at a rate at which they cannot be replenished. By prioritising economic growth, we have disregarded the needs of the natural world. In the process, we have also created unprecedented rates of inequality and social injustice. The impact of this on the well-being of people and the planet is now evident. The defining challenge of the 21st century will be to balance social progress with these environmental boundaries: to learn how all life on Earth can flourish as one.

The more we learn about the challenges of our time, the more we come to understand that they are systemic. They are interconnected and related in ways that can seem invisible to us. Action is being taken around the world to address these systemic challenges. For many, it has led to the realisation that we must reconsider the very fundamentals of society that we have taken for granted. While many transformative innovations will be required to overcome these systemic challenges, our first step must be to restore our relationship with the natural world and heal the divisions that pervade our society. We are all part of the web of life, and until this understanding is instilled within the core of our institutions, we will continue down our current path towards ecological and social decline.

UL has always been committed to enabling our students to become engaged and socially responsible citizens – individuals who can create positive impact both within the region and internationally. We are now building on this commitment by wholly aligning ourselves to the UN Sustainable Development Goals. This commitment brings with it three central responsibilities:

1. To provide the space and mentorship for our students to develop into citizens who act as stewards of sustainability, both in their personal and professional lives.
2. To double-down on sustainability-led research and knowledge generation to support the shaping of our transitioning societal structures.
3. To fulfil our role as custodians of social and environmental responsibility through leading by example within our grounds and communities.

To deliver on these responsibilities, I promise to ensure that sustainable development lies at the heart of everything UL strives to become. From today onwards, sustainability should be evident across all aspects of our campus. It should be an integral part of our ethos, our governance and our leadership. It should guide our research and shape our students' experiences. It should exist at the core of our partnerships and collaborations. Most importantly, it should become an integral part of our home and community life – allowing us to lead the way and inspire the next generation of leaders to come. Ambitious goals such as these cannot be achieved in isolation; they are too grand for any single individual, team or discipline to tackle alone. Instead, they require a commitment to fostering meaningful collaboration so we can envision the world we wish to create and spark the desire to act in solidarity for the good of all life on Earth.

It is our responsibility to take bold action – to have the courage to explore the unknown and collectively pioneer a better path forward.

I invite you to join me in making this our story; the story of how UL became a leader within the transformation towards an equitable and sustainable society. A world where people and planet thrive together.

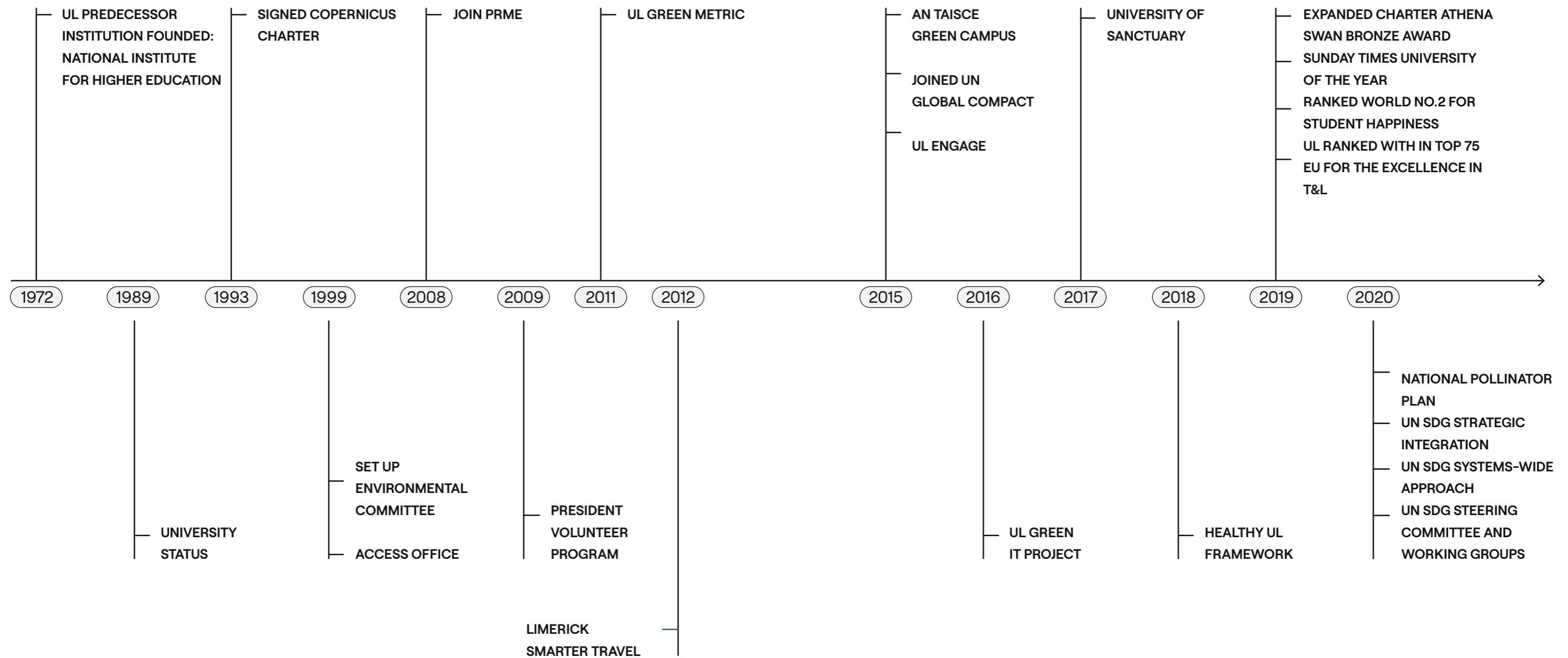
# 01 Introduction





# UL Sustainability Journey To Date

The following is a historic timeline of the key sustainability milestones UL has achieved to date. We have always aspired to create positive social and environmental impact; each milestone conveys how our commitment to sustainable development has grown over time.



# UN Sustainable Development Goals

The United Nations Development Goals (2015) provide “a shared blueprint for peace and prosperity for people and planet, now and into the future”. At their heart, the 17 SDGs are an urgent call for action by all countries in a global partnership. They acknowledge that eliminating poverty and human deprivations must go hand-in-hand with improving access to quality health and education, reducing social and financial inequality, and raising economic prosperity – all while tackling climate change and working to preserve the health of the natural world.

One way of understanding the SDGs is to see them as an acknowledgment of the gravity of our collective situation – by mere virtue of the amount of goals that need to be met. Another perspective is to use them as a mechanism to reflect on how we arrived at our current situation, across each identified dimension of planetary life. Irrespective of the many ways in which they can be interpreted, the one aspect that cannot be ignored is the interconnected, interdisciplinary, cross-boundary and cross-cultural nature of what must be made operational to address them.

The implications on the role of learning and education across society are central to any meaningful conversation relating to societal and environmental change; specifically, the implications on the institutions and individuals who serve these social and natural functions. For higher education institutions (HEIs), as producers of both knowledge and talent, there is a transversal infrastructural responsibility that must be risen to.

To meet this great need, HEIs will need to play three interdependent roles:

- Foster change agents that can act to realise transformation towards the complex sustainability challenges of the 21st century.
- Develop sustainability-based research and knowledge to guide the transition of our societal institutions and structures.
- Transform higher education institutions into pioneering exemplar models of sustainable development.

The complexity of transitioning to a sustainable world means no single institution or sector can complete this journey in isolation. Our societal challenges are fundamentally a collective action problem – their resolution will be characterised by the recognition and realisation of our deep interdependence, with place and within our communities.



# Becoming a Sustainable University

“The challenge of creating a more sustainable future for Ireland is a collective responsibility on all of us” (Project Ireland 2040, 2019). It is our responsibility as a HEI to contribute to the transition toward a sustainable society and become a ‘Sustainable University’.

To become a Sustainable University, we must start by acknowledging that true sustainability will require permanent adaptive responsiveness to on-going change. The prerequisite of adaptability and responsiveness is embodiment. It ensures ideas and intentions are rooted in action. Consequently, embodiment can be seen as the central characteristic of a Sustainable University; a title for institutions that go beyond traditional curricula and research programmes, and actively explore change within their own ethos, practices and operations.

A sustainable world is not a foregone conclusion – our actions today will determine the future we manifest. The gravity of this responsibility necessitates that we do not drift along with the tides of change. Instead,

we are called to intentionally open our mind, heart, and hands to the possibilities that can only be revealed by moving bravely into the unknown. If we become trapped by dogma and incremental innovation, we will find ourselves sustaining a world characterised by the faults of the present. The success of our collective transition will largely depend on the degree to which HEIs claim a role in advancing the critical gaps in our knowledge and nurturing the vital shifts in our culture. To fully leverage the potential for change that HEIs hold, this role must play out across all aspects of our institutions: from boardrooms, to lecture halls, and campus grounds alike.

As a result, UL recognises that success is to be found in the union between the thoughtful reimagining of both the tangible aspects (e.g. educational spaces) and intangible aspects (e.g. governance models) of our institution. To do so requires a whole university approach, underpinned by a model that takes the main areas of the modern university into account. These areas provide platforms for experimentation – and ultimately transformation – in service of the journey toward becoming a Sustainable University.





# Sustainability Framework 2030

To delivery on its sustainability commitments, the University of Limerick (UL) has established a cohesive governance structure to guarantee clear and consistent leadership, responsibility, open accountability, and an agile approach to sustainability allowing us to learn as we go and adapt to a complex, ambiguous and fluid reality.

## COMMITMENT TO SUSTAINABILITY

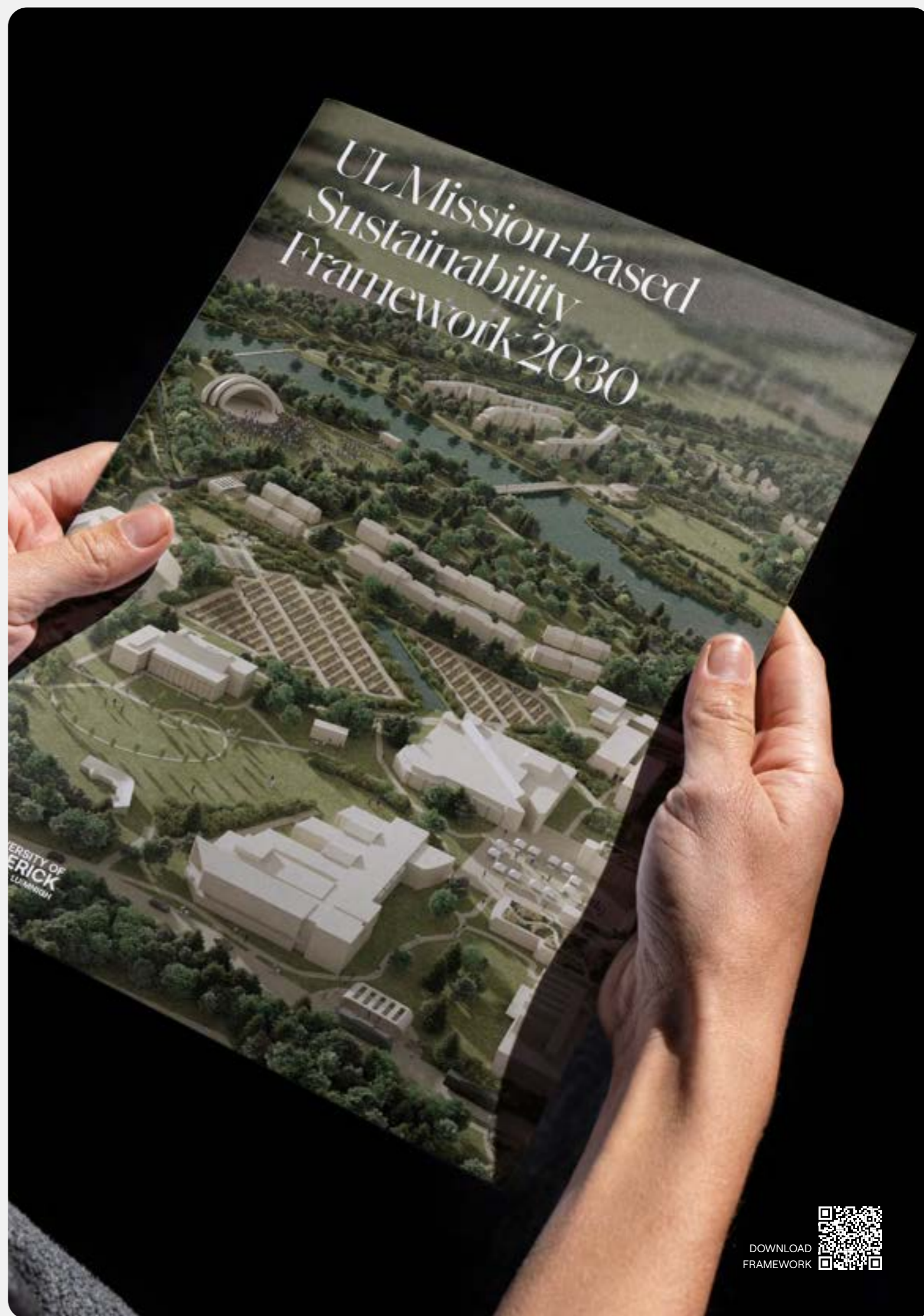
The President at UL provides leadership, commitment and support for UL Sustainability Framework 2030 (UL's system-wide approach to becoming a sustainable university). The framework is UL's targeted response to the UN SDGs.

The Chief Finance and Performance Officer (CFPO) and UL's Executive Committee (EC) have overall responsibility for sustainability at the University of Limerick. The governance structure for the implementation of the sustainability agenda, is centred around the UL Sustainability Framework 2030.

## UL'S SUSTAINABILITY FRAMEWORK 2030

The framework takes a mission-based approach. A mission-based approach requires the identification of clear metrics against which we can measure our progress. UL's Sustainability Framework 2030 was co-designed and developed by its community with active senior support and leadership.

The framework sets out a UL system-wide approach to sustainability and articulates our commitment to successfully implementing 21 missions, all of which are aimed at realising our ambition of becoming a sustainable university.





# UL Sustainability Missions



Mission Lab

By 2030, UL's Mission Lab will have orchestrated and led its extended community to achieve the UL Mission Portfolio.



Earth Guild

By 2030, UL will have co-developed a trade school that supports the growth of sustainability-based vocations within local communities.



Campus Tribe

By 2030, UL will foster a place-based identity anchored in a program of nature-based rituals that embody a culture of connectedness.



Biodiverse Campus

By 2030, UL will increase the biodiversity and volume of plant and animal life on campus and maintain ecologically healthy levels.



Transition Governance Framework

By 2030, UL will have piloted a sustainability-led governance model and have shaped HE policy within Ireland.



Open Loop University

By 2030, UL will provide access to the mission lab process and learning content to its alumni and offer them opportunities to engage with the mission portfolio.



Mission Driven Learning

By 2030, UL will have pioneered mission-driven curriculum to support the transition.



Revitalised River Shannon

By 2030, UL will have significantly contributed to the ecological health of the River Shannon and its associated natural ecosystems.



Citizens Mission Council

By 2030, UL's Mission Lab will have fostered active citizenship through robust civic engagement and participatory innovation processes.



Active Mobility Campus

By 2030, UL will only provide sustainable forms of transport within and between campuses, with a focus on physical mobility where possible.



Egalitarian University

By 2030, UL will be the national leader for the embedding of equality & inclusion in our structures, opportunities and community.



Clean Water Campus

By 2030, UL will optimise campus water accessibility and water management & protection.



Digital Campus Commons

By 2030, UL will have transparently reported on and shared its sustainability journey through a university digital twin.



Student Livelearns

By 2030, UL will build student accommodation that integrates the practices, behaviours and infrastructure of sustainable development into the everyday lives of students.



Self Powered Campus

By 2030, UL will act as a test bed for the development and scaling of sustainable energy systems.



Fab Campus

By 2030, UL will act as a test bed for the development and scaling of circular production & consumption systems.



Agrihood Campus

By 2030, the majority of food consumed on UL campus will be healthy and sourced from within the bioregion and/or from the university grounds.



Circular Campus

By 2030, UL will act as a test bed for the development of circular material flows and material usage.



Mission Impact Hub

By 2030, UL's startup incubator will incorporate principles of sustainability into its startup programs and work to commercialise opportunities identified by the Mission Lab.



Biophillic Campus

By 2030, UL will have integrated nature and natural materials within all campus buildings and environments.



Carbon Neutral Campus

By 2030, UL will have achieved carbon neutral status.

# Mission Lab

## Mission Lab is responsible for leading the orchestration and progression of the mission portfolio.

At its core, a mission-based approach affords UL the time and space to build a bespoke innovation engine; one that will enable increased organisational agility and responsiveness as it matures. It will require the development of a strong governance model that ensures collective accountability and responsibility, all while enabling experimentation and informed risk-taking.

Engaging students in the work of Mission Lab is crucial for the progression of the mission portfolio and the university's transition to sustainability. As members of the campus community and future leaders, students bring fresh perspectives, creativity, and enthusiasm to problem-solving. By involving students as co-designers of solutions, we not only foster a sense of ownership and commitment to the sustainability missions, but also tap into their unique experiences, knowledge, and talents. This collaborative approach enables the development of innovative, effective,

and contextually relevant solutions that address the challenges faced by the university. Furthermore, engaging students in the Mission Lab's efforts helps cultivate a culture of sustainability and environmental stewardship within the campus community, empowering students to become agents of change in their own lives and beyond.

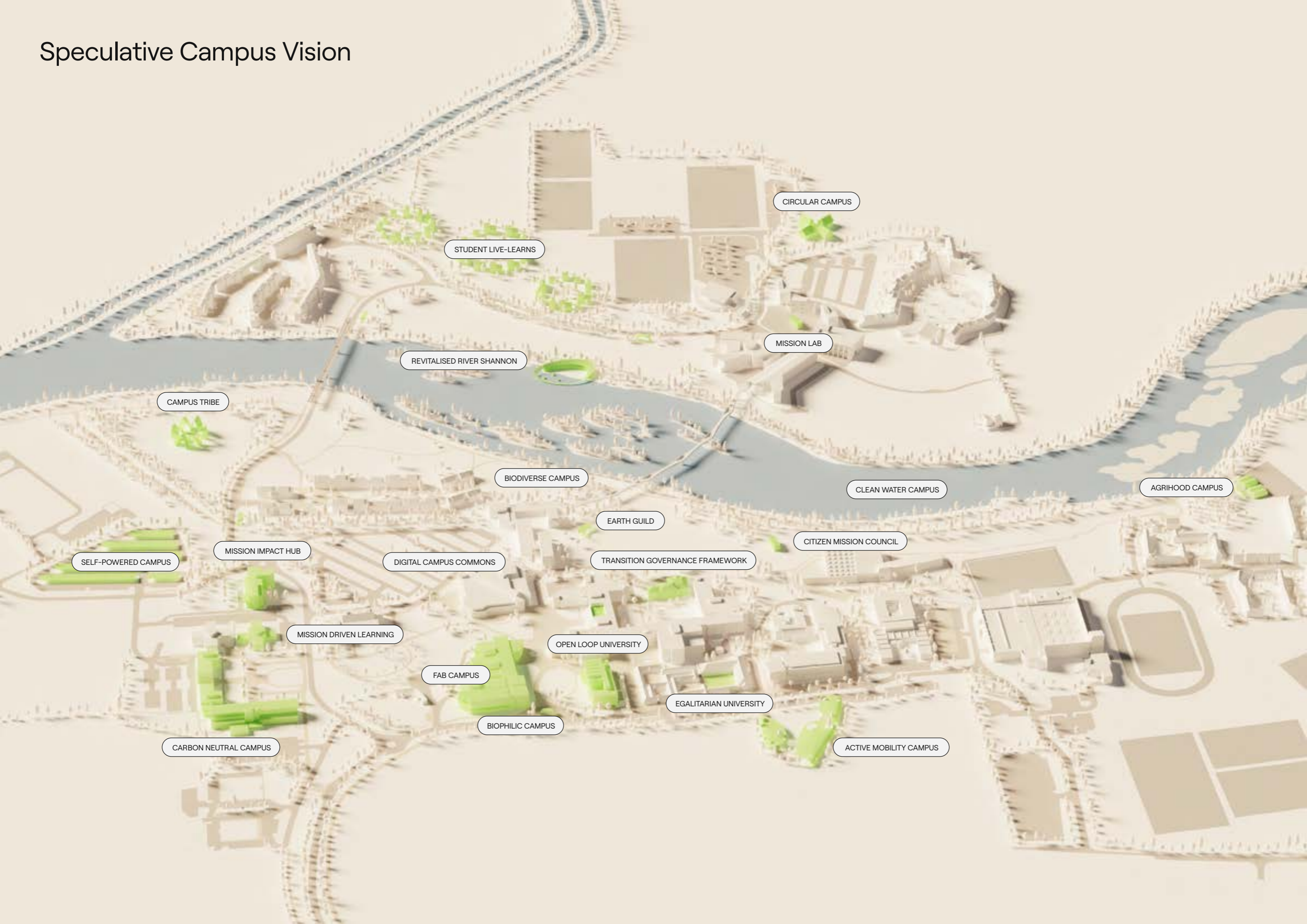
As a new entity, the Mission Lab will be operated by a dedicated team with the mandate to fulfill the following roles:

- Orchestrate and manage the mission portfolio
- Act as cross-pollinators between mission team
- Provide resources and support to mission teams
- Develop novel mission-based methods and tools
- Capture and disseminate on-going learning
- Leverage funding for effective investment
- Build new connections and increase momentum





# Speculative Campus Vision



CIRCULAR CAMPUS

STUDENT LIVE-LEARNS

MISSION LAB

REVITALISED RIVER SHANNON

CAMPUS TRIBE

BIODIVERSE CAMPUS

CLEAN WATER CAMPUS

AGRIHOOD CAMPUS

SELF-POWERED CAMPUS

MISSION IMPACT HUB

DIGITAL CAMPUS COMMONS

EARTH GUILD

TRANSITION GOVERNANCE FRAMEWORK

CITIZEN MISSION COUNCIL

MISSION DRIVEN LEARNING

OPEN LOOP UNIVERSITY

FAB CAMPUS

EGALITARIAN UNIVERSITY

CARBON NEUTRAL CAMPUS

BIOPHILIC CAMPUS

ACTIVE MOBILITY CAMPUS



# Sustainability Governance

## CENTRE FOR SUSTAINABLE FUTURES & INNOVATION

The newly established Centre for Sustainable Futures and Innovation (CSFI) is tasked with two key functions: 1) creating compelling future regenerative visions for UL and 2) implementing UL's systems-wide (mission-based approach) to sustainability ([www.ul.ie/sustainability](http://www.ul.ie/sustainability)). The CSFI is responsible for the implementation of UL's 21 Missions, through the development of an innovation engine at the University called the Mission Lab. This lab will work with teams from across campus to implement the missions. UL advocates the open and transparent monitoring of sustainability and as an integral part of this framework the CSFI will co-design and develop a university-wide digital twin that will allow us to identify clear metrics and measures, against which we will map our progress towards becoming a truly a sustainable university. The CSFI is supported and guided by two key internal entities: UL Campus Green Office, which is an integral part of the Buildings and Estates Department; and the Sustainable University Working Group, which comprises over 80 individuals from across all walks of life within UL.

## ECOSYSTEM ORCHESTRATION

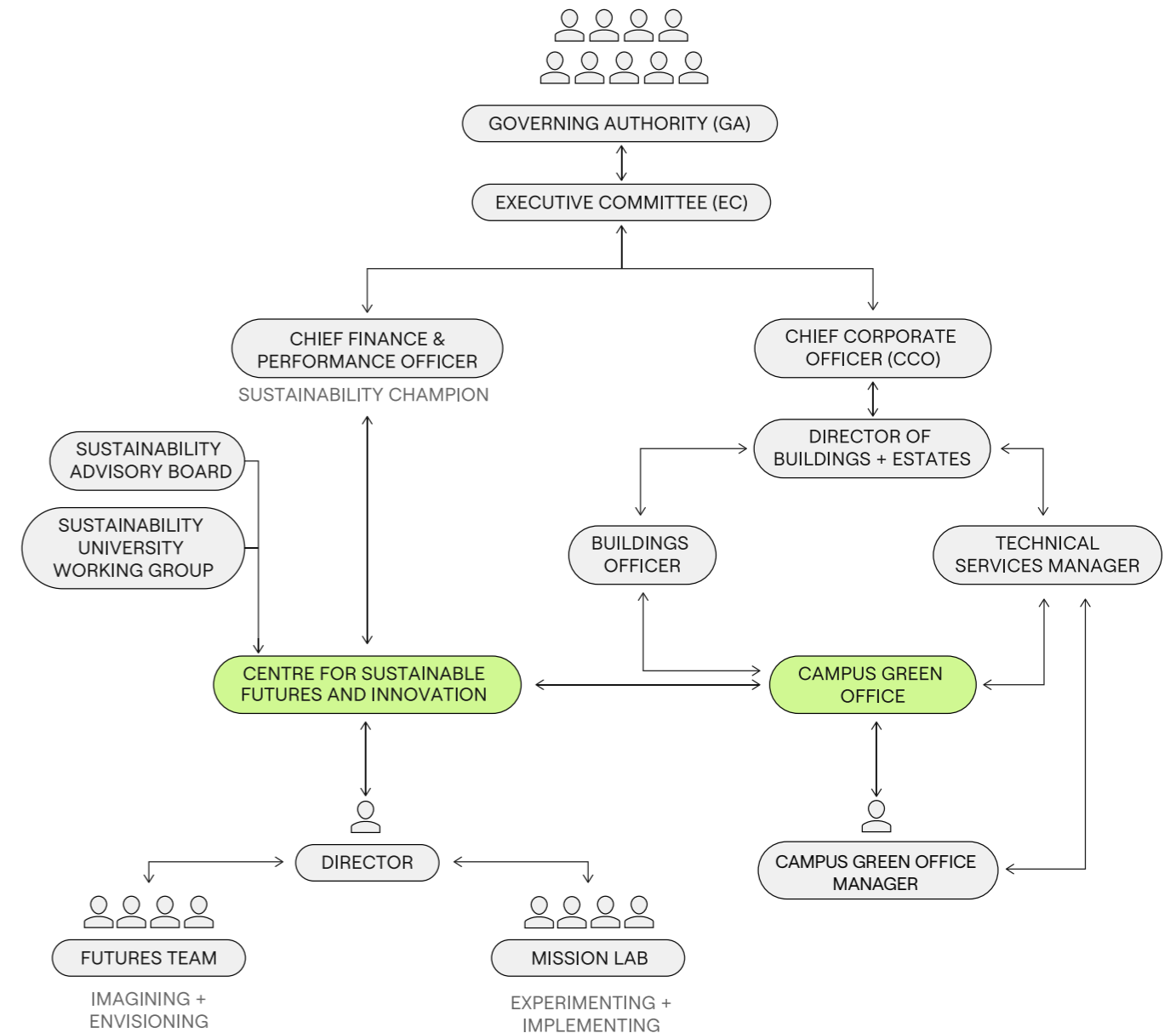
In addition to co-creating future visions and working to implement change, the CSFI team connects existing initiatives, projects and actions to build increased awareness and cohesiveness. The CSFI works collaboratively to inspire and support campus efforts to embed sustainability awareness and action into all aspects of university life including our learning, research, governance and community-based

engagements. This is done in collaboration with the Marketing and Communications Division, Faculty Deans, Research Institutes, Student Life and all other professional entities within the university's ecosystem. To ensure student-led sustainability is actively supported and encouraged, a student coordinator has been appointed to identify and support student-led sustainability initiatives. The student coordinator is an integral member of the Mission Lab team and works alongside the Mission Lab Manager.

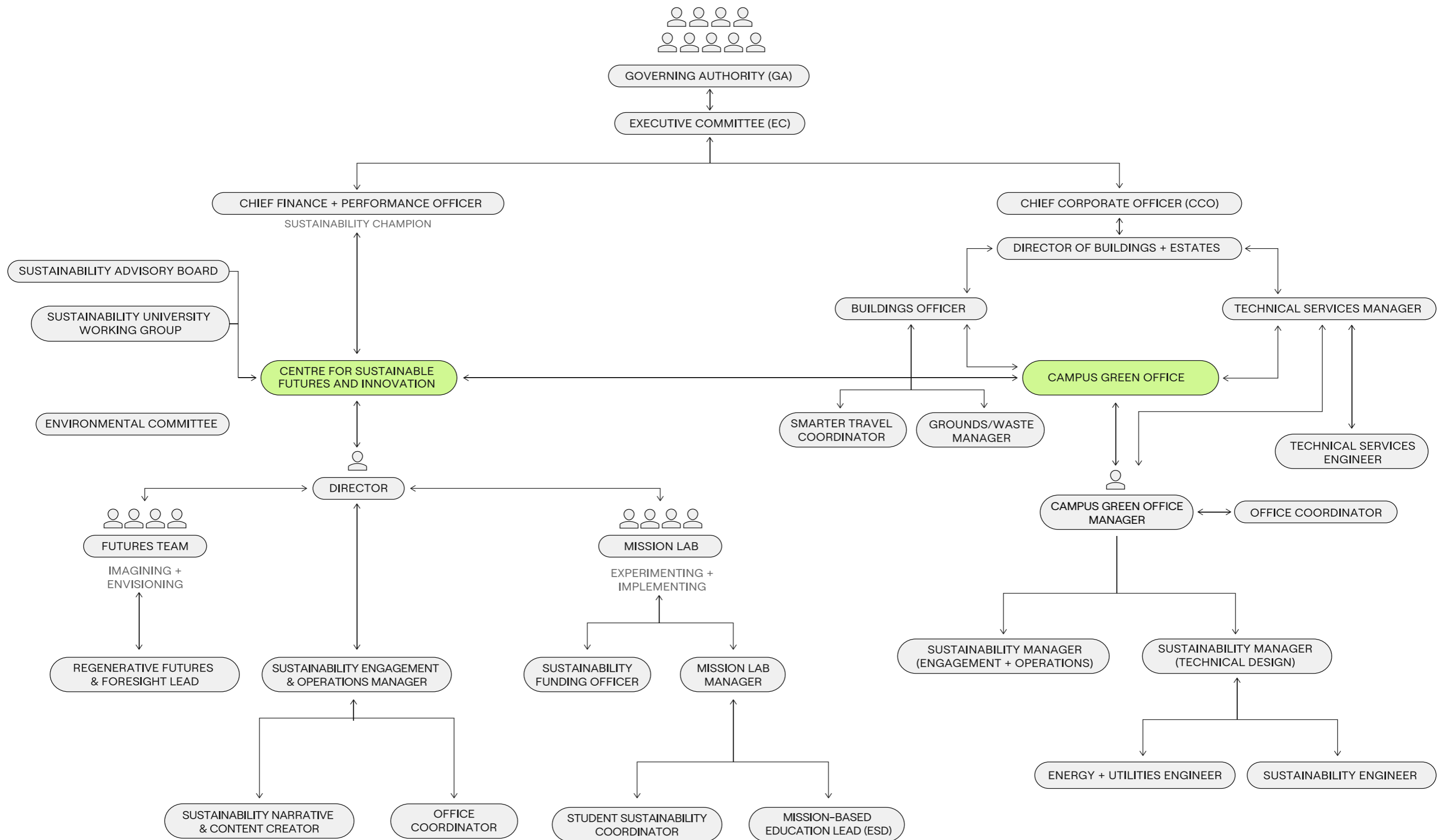
## GOVERNANCE

Together with the CFPO, the Director of the CSFI works to establish, monitor and adapt sustainability milestones and targets, and to make this data open and accessible to all. The Director of CSFI, serves in an advisory function to the President and Executive Team. The Director CSFI reports to the Chief Finance and Performance Officer. The Director CSFI communicates progress to the Executive Committee for the attention of Governing Authority (GA). All government mandates related to sustainability will be assigned to an executive committee member and supported by the CFPO, the Director of CSFI and the Campus Green Office Manager. Implementation of all sustainability-based missions is supported by the appropriate function or division within UL.

The UL Sustainability Advisory Board is chaired by the CFPO and provides input and guidance to the CSFI, Campus Green Office, EC and GA on all matters related to sustainability.



SEE EXPANDED ORG CHART ON NEXT PAGE



# Transparent Sustainability Journey

The complexity of achieving sustainability-led missions requires new forms of data-capture and insight generation.

## DIGITAL CAMPUS COMMONS

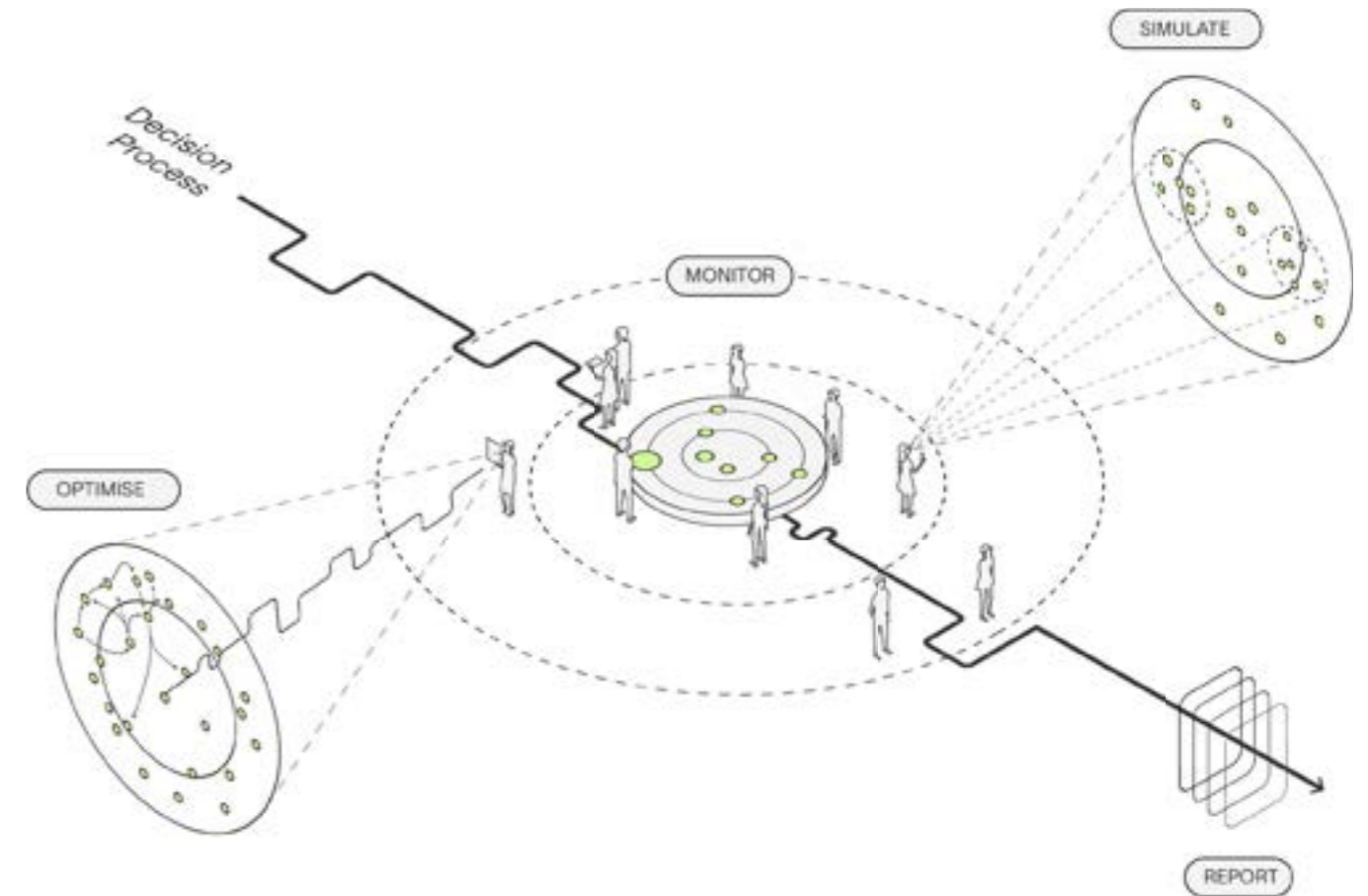
'Digital Campus Commons' is one of the 21 Missions. This mission sees UL adopt a data-driven approach to baselining, monitoring, and reporting on the university's sustainability journey. In doing so, mission progress will become more accurately measured and decisions supported by real-time intelligence. With this mission, UL commits to transparently report and share its sustainability journey through a university digital twin.

## UNIVERSITY DIGITAL TWIN

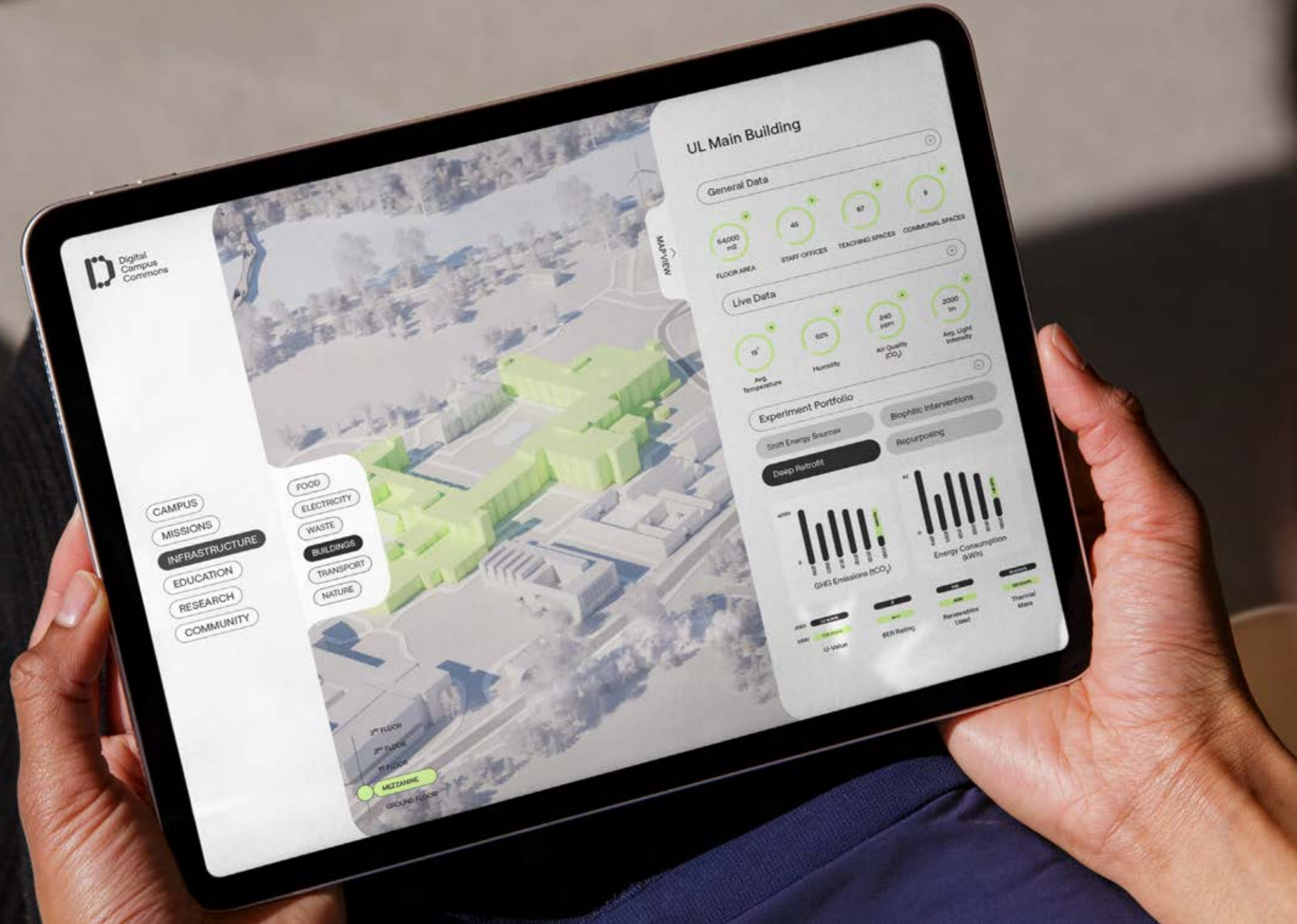
Digital twins are virtual copies of physical entities that can be used to simulate, test and optimize various scenarios and outcomes. For a university, digital twins can provide a powerful tool to track, measure and communicate its sustainability journey.

By creating a digital twin of the campus, facilities, operations and activities, UL can collect and analyze data on various mission metrics, such as carbon emissions, active mobility, food production, and biodiversity. Digital twins can also help the university identify potential risks and opportunities for improvement, as well as evaluate the impact of different interventions and solutions.

Furthermore, digital twins can enable a university to transparently report its sustainability progress to its stakeholders, such as students, staff, alumni, industry partners and regulators.







02

Carbon

Neutral

Campus



# Carbon Neutral Campus

## HEI GRAND CHALLENGE: RESILIENT BIOREGION

As a university renowned for its natural beauty, UL has the responsibility to ensure its physical presence does not negatively impact the health of the surrounding Shannon bioregion. We understand that our ecological systems act as the bedrock for the flourishing of all life on earth. Their safekeeping requires UL to take on the role of custodians; restoring the local natural environment to optimal health and protecting it from any future damage.

## MISSION: CARBON NEUTRAL CAMPUS

By 2030, UL will have achieved carbon neutral status. The dramatic reduction of carbon emissions is essential to achieve our climate goals. This mission sees UL transform our campus into one which has no net release of carbon dioxide into the atmosphere. To do so, the campus carbon footprint will be eliminated through reduced emissions, carbon sequestration, and carbon offsetting.

## OUTCOMES

- + carbon reduction
- + carbon sequestration
- + carbon offsetting
- + energy efficiency
- + building retrofits
- + repair and repurposing
- + rewilding and green space
- carbon emissions
- energy leakage and waste
- fossil fuel usage

## METRICS

- Carbon Dioxide Emissions (kgCO<sub>2</sub>)
- Carbon Dioxide Absorption (kgCO<sub>2</sub>)

## SUSTAINABLE DEVELOPMENT GOALS IN FOCUS



HEI GRAND CHALLENGE

RESILIENT BIOREGION

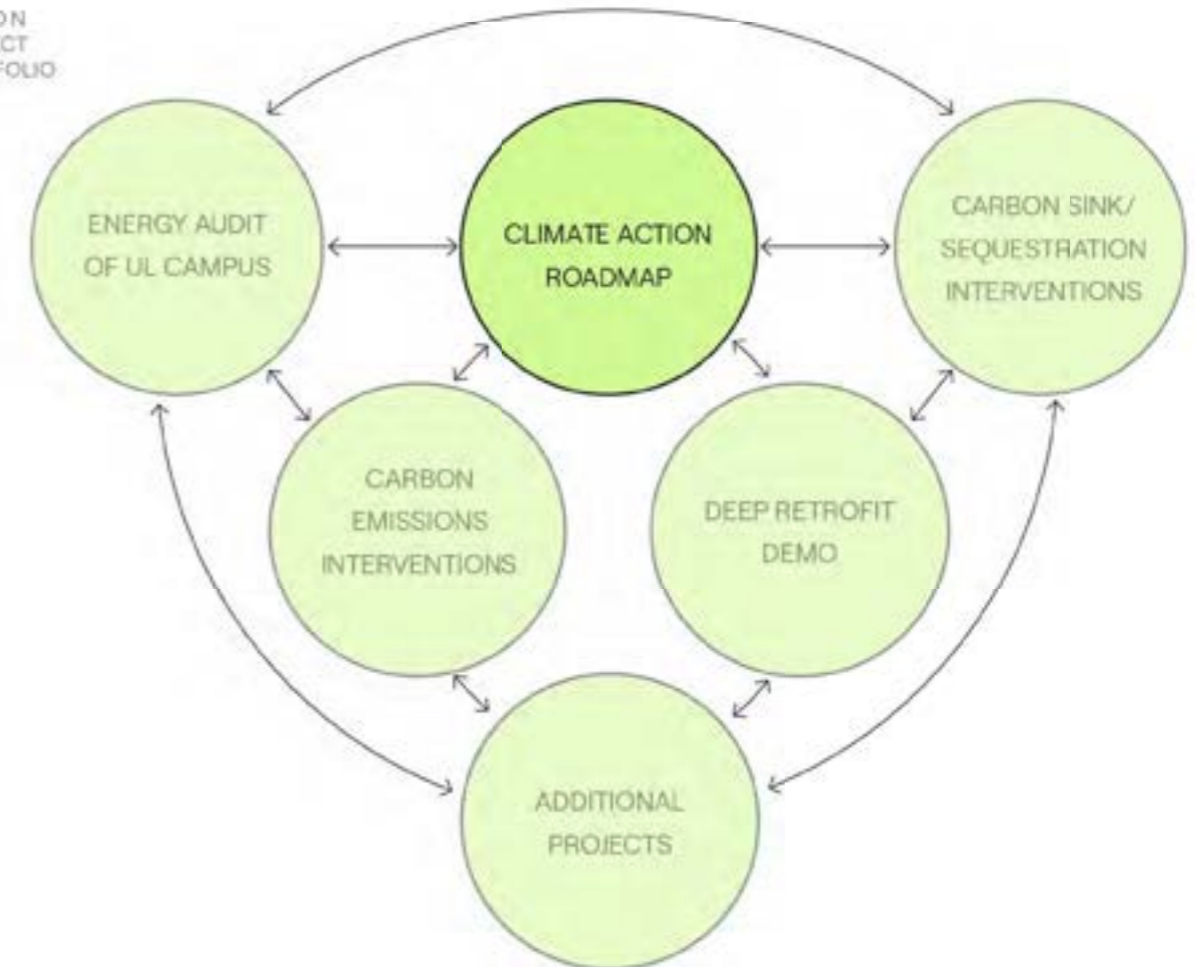
MISSION

CARBON NEUTRAL CAMPUS

CROSS SECTORAL INNOVATION



MISSION PROJECT PORTFOLIO





# Decarbonisation vs Carbon Neutrality

While decarbonisation is an important step towards carbon neutrality it may not be sufficient to avoid the worst impacts of climate change.

Carbon neutrality requires a more ambitious and holistic approach that considers not only how to reduce emissions, but also how to enhance sinks and offset residual emissions.

To measure carbon neutrality, the university needs to account for all sources and sinks of carbon dioxide across different scopes and sectors. Sources are activities that emit carbon dioxide, such as burning fossil fuels or deforestation. Sinks are processes that remove carbon dioxide from the atmosphere, such as photosynthesis or carbon sequestration

It's vital to consider the full scope of emissions when aiming to become a truly carbon-neutral campus. Direct carbon emissions (scope 1) are only a part of an university's total carbon footprint. Indirect emissions (scope 2 and 3) are those that result from the use of energy or other resources that are produced or consumed outside the university's boundary. Indirect emissions can be significant and may account for more than 80% of total emissions.

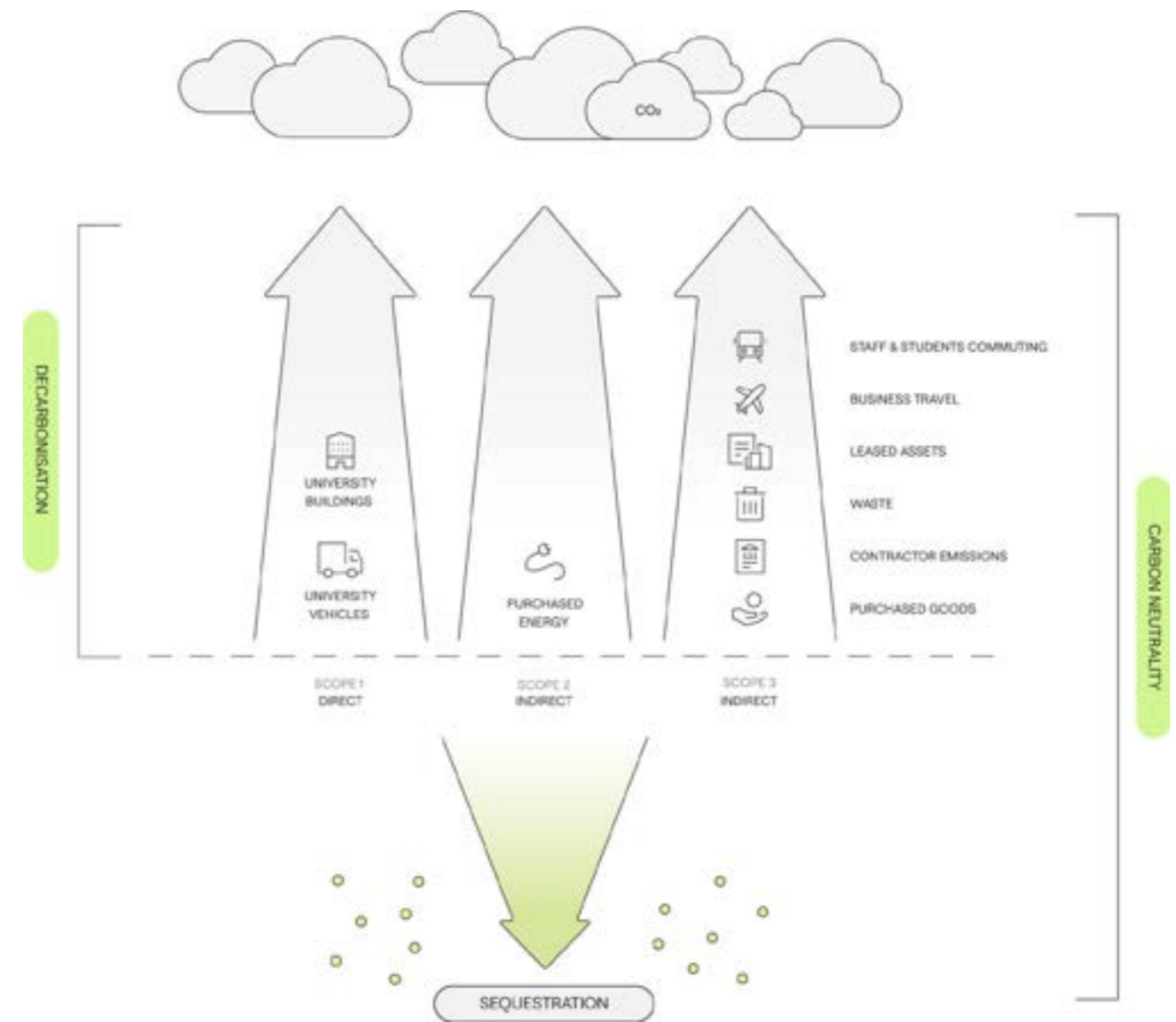
## DEFINITIONS OF SCOPE 1, 2 AND 3 EMISSIONS:

Scope 1 and 2 emissions refer to those emissions that originate from sources that are directly or indirectly owned or controlled by an organisation, whereas scope 3 emissions refer to those emissions that arise from sources that are neither owned nor controlled by the organisation but are associated with its activities.

**SCOPE 1:** comprises emissions from sources that an organisation directly owns or controls – for example while running its boilers and vehicles.

**SCOPE 2:** consists of emissions that an organisation indirectly causes when it purchases and consumes energy that is generated elsewhere. For example, electricity or energy it buys for heating and cooling.

**SCOPE 3:** encompasses emissions that are not generated by the organisation itself, and not the outcome of activities from assets owned or controlled by it, but by those that it is indirectly accountable for, along its value chain. An example of this is when it procures, utilises, and disposes of products from suppliers.



# Systemic Approach to Carbon Neutrality

Systems change is essential for tackling complex and wicked problems such as climate change.

## SYSTEMS CHANGE

Systems change is the process of transforming existing systems into more desirable ones. It involves shifting the structures, patterns, relationships, behaviours, values, norms, incentives, rules, narratives, cultures, power dynamics, mindsets, paradigms etc. that shape how the university system operates and performs.

Systems change is essential for tackling complex and wicked problems such as climate change because it offers a way to address problems that cannot be solved by conventional approaches. Systems change requires a radical shift in how we think about value, structures, governance and agency.

We have identified several layers of the university system that need transformation to achieve our mission and become a carbon neutral campus. These include soft-system layers: Governance and Culture, along with hard-system layers: Buildings, Electricity, Transport, Food, Waste, Procurement, and Nature.

## PORTFOLIO OF SOLUTIONS

Portfolio of solutions is a concept that describes a set of diverse, complementary and adaptive interventions that can collectively contribute to systems change. It is not about finding one silver bullet, but rather experimenting with multiple approaches, learning from failures and successes, and scaling what works.

UL will utilise a portfolio of solutions for systems change by taking a holistic approach that involves working with multiple stakeholders and creating a range of interventions that address different layers of the university system.

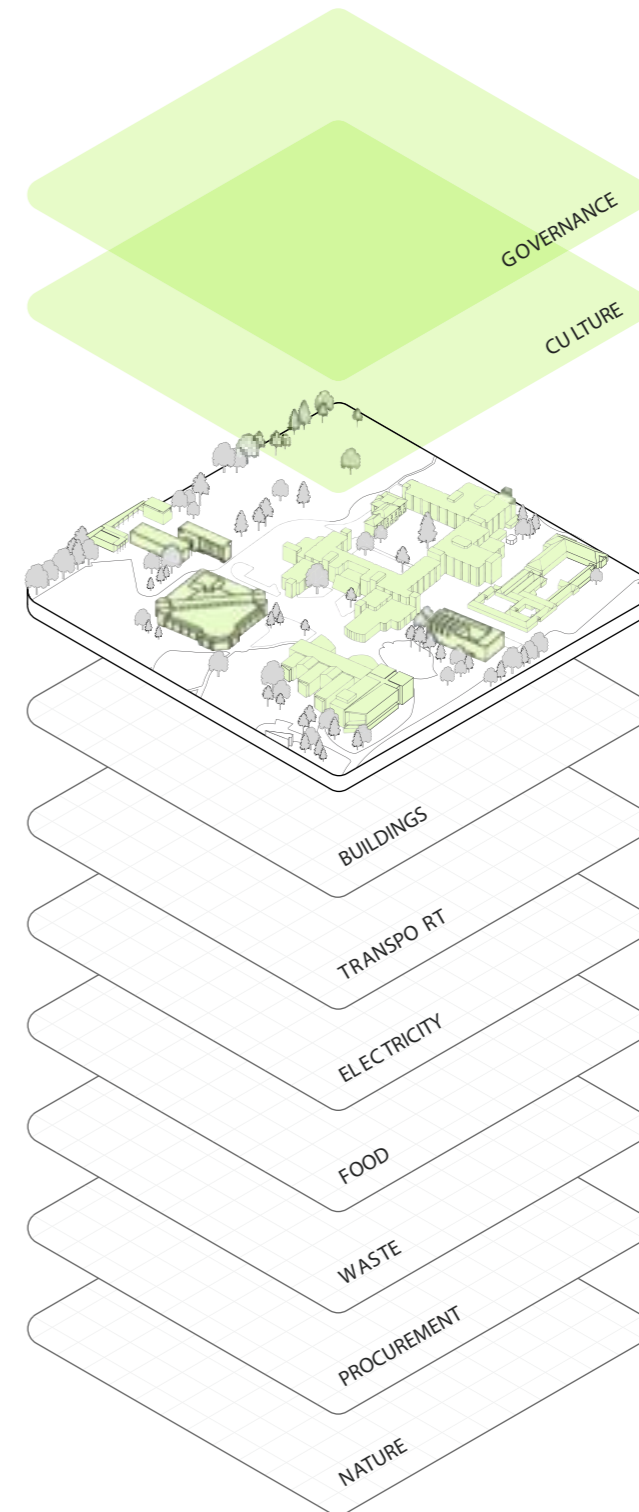
Portfolio of solutions includes interventions that:

**REDUCE EMISSIONS:** interventions that directly reduce the carbon dioxide emissions of the university.

**INCREASE SEQUESTRATION:** interventions that directly increase carbon dioxide absorption and sequestration.

**CHANGE BEHAVIOURS:** interventions, actions, and policies that seek to change behaviours of staff, students and other stakeholders. These behavioral changes will eventually have an indirect effect on carbon emissions.

The next few pages will cover examples and types of solutions and interventions that will make the campus carbon neutral.





# Portfolio of Solutions: Reduce Emissions

Universities have a significant role to play in the decarbonisation effort, as they are large consumers of energy and resources.

University of Limerick has set the goal of becoming carbon neutral, and reducing carbon emissions is a crucial step towards realising this mission. This can also help UL save money on energy costs, increase efficiency, and can help attract environmentally conscious students, faculty, and funding.

The set of interventions (listed on the right) will directly reduce UL's carbon emissions by increasing energy efficiency of buildings, transitioning to renewable energy sources, promoting active and sustainable transport, and reducing waste.

Increasing energy efficiency of buildings is an effective way of reducing direct and indirect carbon emissions of buildings on campus. This can be achieved through interventions such as installing LED lights, improving insulation, and upgrading heating systems. UL will also reduce its carbon emissions by

transitioning to renewable energy sources such as solar or wind power. This can be achieved by installing solar panels or wind turbines on campus or purchasing renewable energy from off-site sources.

By promoting active mobility and sustainable transport options such as walking, cycling, and public transport, UL can greatly reduce indirect emissions from commuting. The location and suburban nature of the university campus, coupled with a shortage of local accommodation and housing results in many staff and students commuting long distances.

Lastly, implementation of waste avoidance programs, followed by waste reuse and finally waste reduction programs, will help reduce amount of waste sent to landfills, which produce methane, and emit carbon dioxide in the waste management process.



# Portfolio of Solutions: Increase Sequestration

Universities have a responsibility to act as stewards of the environment, and increasing carbon absorption is one way they can fulfill that responsibility. By taking steps to increase carbon absorption, UL can help protect ecosystems and preserve biodiversity.

Increasing carbon sequestration is a critical component of achieving a more sustainable future, and becoming carbon neutral. With our 366 acre campus, UL has a unique opportunity to make a positive impact. By planting trees, installing green roofs, practicing carbon farming, rewilding, depaving, and preserving biodiversity, UL can increase its carbon

absorption and fulfill our responsibility as stewards of the environment.

Planting trees and other vegetation on campus is an effective way for universities to increase carbon absorption. Trees absorb carbon dioxide from the atmosphere during photosynthesis and store it in their biomass. Additionally, trees provide numerous other benefits, such as reducing heat island effects, improving air quality, and enhancing biodiversity.

Green roofs and facades are other ways for the university to increase carbon absorption. By covering roofs and facades with vegetation, we can absorb carbon dioxide and reduce the amount of heat that buildings absorb. Green roofs can also help to reduce stormwater runoff and improve air quality.

Biodiversity and rewilding can also have positive impacts on public health, which is a key component of sustainable development. Green spaces and natural habitats can provide opportunities for physical activity and recreation, reduce air pollution, and enhance mental health and wellbeing.





# Portfolio of Solutions: Change Behaviours

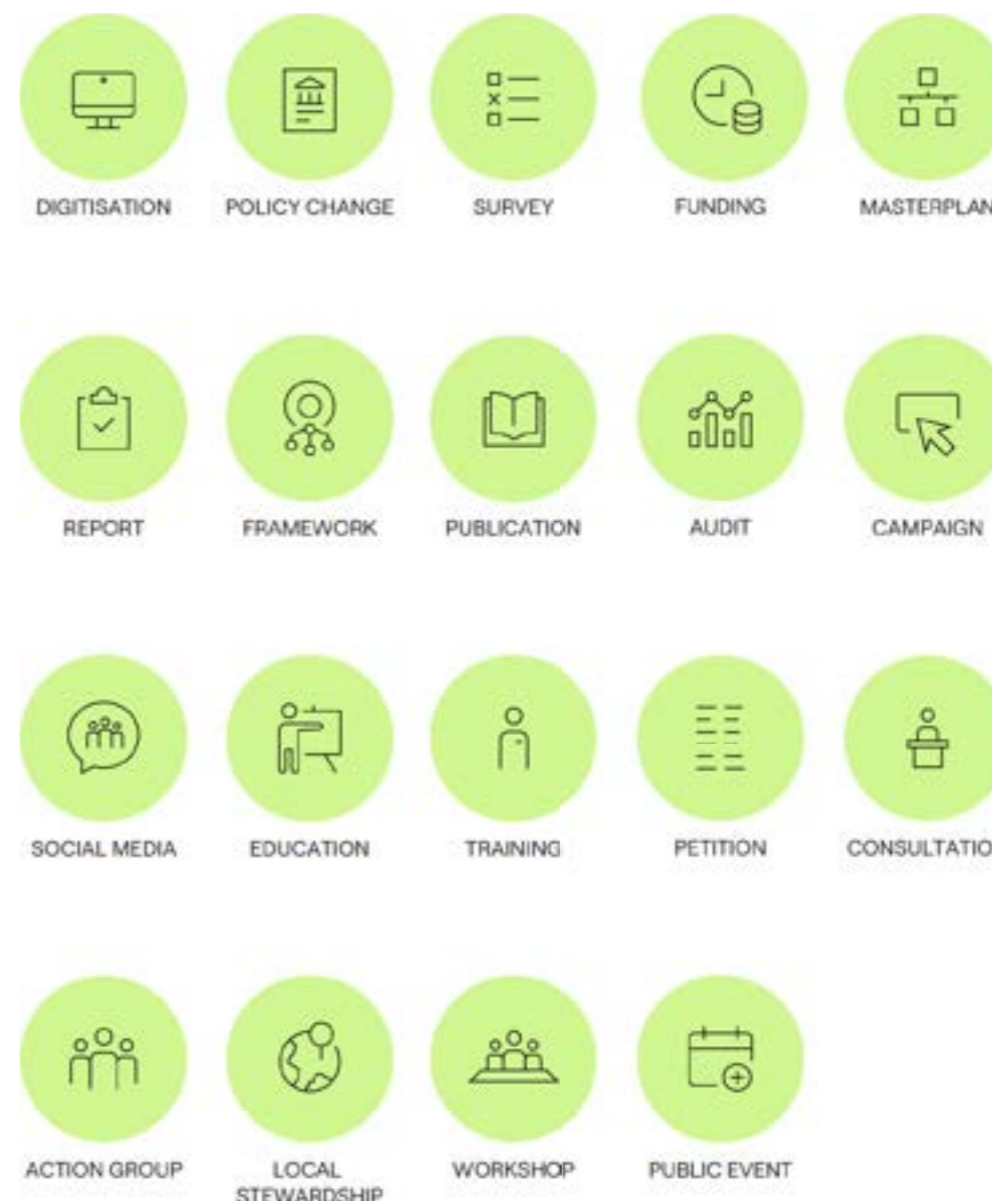
Promoting sustainable practices is not only important for reducing carbon emissions, but also for achieving broader sustainable development.

As institutions of higher education, universities have a responsibility to lead by example and promote sustainable practices. By implementing a combination of top-down governance interventions and bottom-up cultural interventions, universities can effectively change behaviors towards a more sustainable future. Policy and governance interventions provide the framework for sustainable practices, while cultural interventions foster a culture of sustainability and encourage individuals to take action.

Starting with the top-down approach, we need to incorporate sustainability requirements into university policies, including procurement policies, building design, construction standards, and transportation policies.

We can promote bottom-up sustainable practices through education and awareness campaigns. This includes providing information and resources about sustainable practices, as well as encouraging students, staff, and researchers to adopt sustainable behaviors in their daily lives.

We have already made progress in this area with the adoption of the Mission-based Sustainability Framework 2030 and establishment of Centre for Sustainable Futures and Innovation, and the Sustainable University Working Group.







# Baseline Analysis

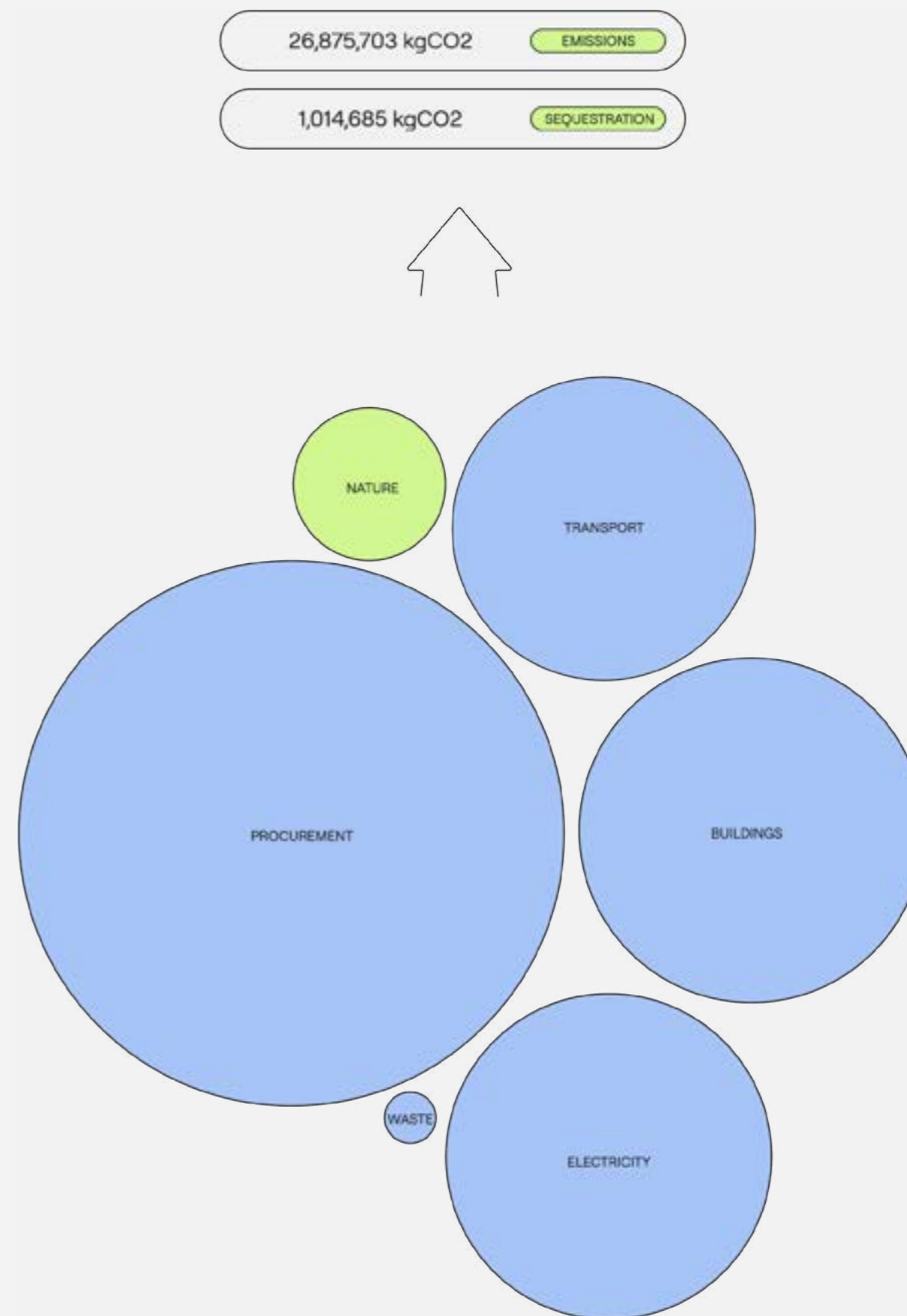
Conducting a baseline analysis of a university's carbon footprint is a critical first step towards achieving carbon neutrality. This analysis provides a starting point for developing strategies to reduce emissions and enhance sequestration.

It is important to note that the current baseline analysis is based on preliminary data, and there is a need for extensive mapping and data gathering to obtain accurate baseline analysis. The preliminary data can provide a general overview of the university's carbon footprint, but it may not capture all the sources of carbon emissions and sequestration. Therefore, a more detailed and accurate analysis is required to identify all the sources of emissions and sequestration. Baseling projects are already in

development and will be kicked-off this year. These projects will baseline direct and indirect emissions, and will be reported through the university digital twin. This data will be openly shared and updated frequently, as outlined in the Digital Campus Commons mission.

The following pages will look at carbon emissions of each layer of the university system. The size of the bubbles on the adjacent pages represent carbon emissions and the scale of these bubbles is retained across the pages so that we can get a sense of how the layers compare to each other and where major work is needed to bring the emissions down. The exceptions to this scale rule are this page (overview of all layers) and the soft-system layers (Governance and Culture). The total carbon emissions/sequestration will be shown at the top of each page.

As stated previously, these numbers are our current best estimates until more accurate baseline data is available.



# Baseline Analysis: Buildings

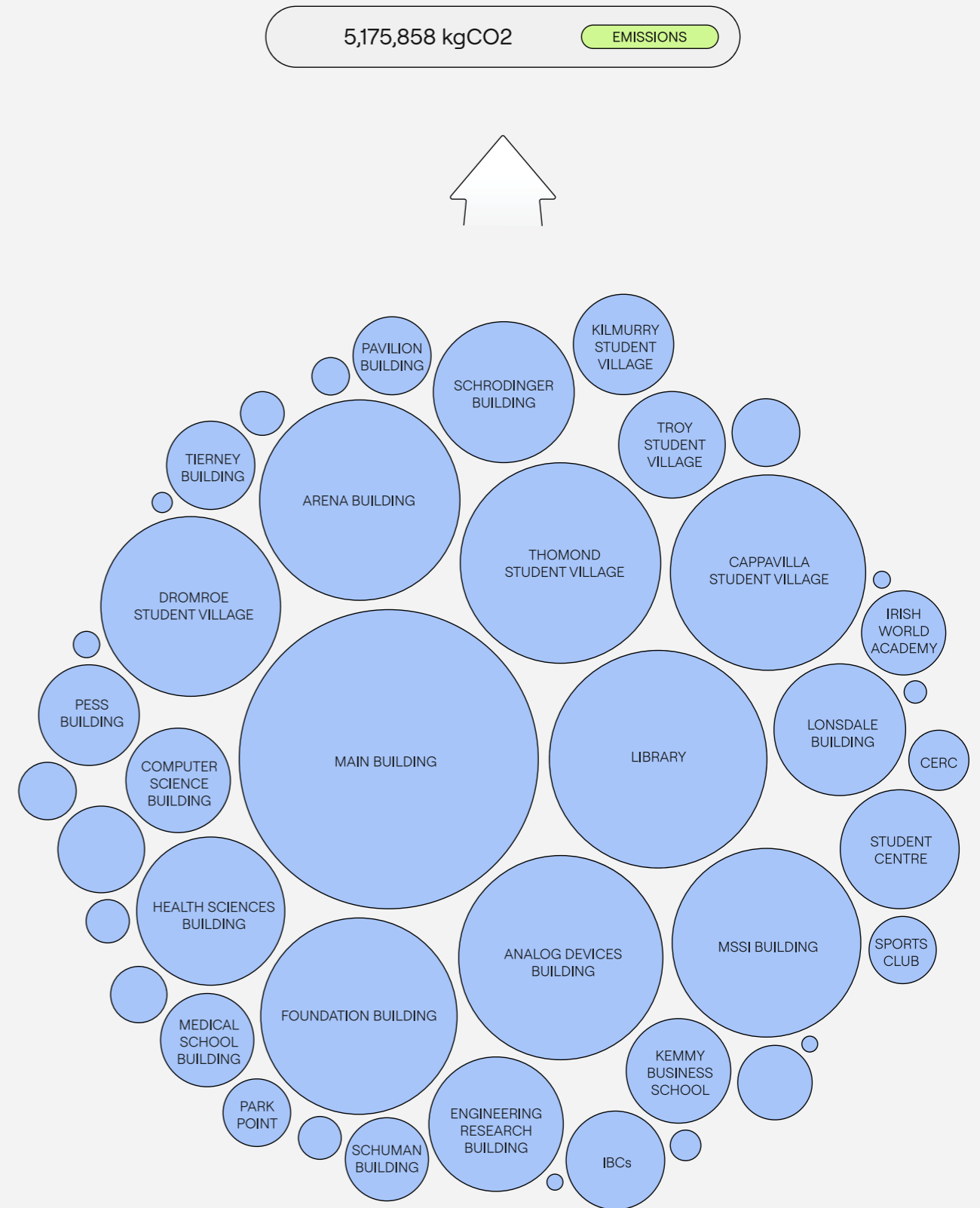
Thermal emissions of campus buildings account for 19% of total emissions.

Buildings are one of the largest sources of carbon emissions, accounting for a significant portion of a university's carbon footprint. By having data on the thermal carbon emissions of all buildings, we can identify which buildings are the biggest emitters and prioritize efforts to reduce emissions.

One solution to reduce emissions from buildings is to improve energy efficiency. This can be achieved through a variety of measures, including entire building retrofits, upgrading insulation, improving heating and cooling systems by installing high-efficiency heat-pumps. The other side includes reducing emissions by not installing any heating systems that use fossil fuels.

To this end UL has submitted a grant funding proposal to the HEA under their Energy Efficiency Decarbonisation Pathfinder Programme 2023 to significantly reduce the CO2 output associated with two of its five worst performing buildings.

Another solution is to incorporate sustainability into building design and construction processes. This can include using sustainable materials, designing buildings to optimize energy use, and incorporating passive solar gain into building design. By considering sustainability from the outset of building design and construction, we can reduce emissions and create a more sustainable campus.





# Baseline Analysis: Electricity

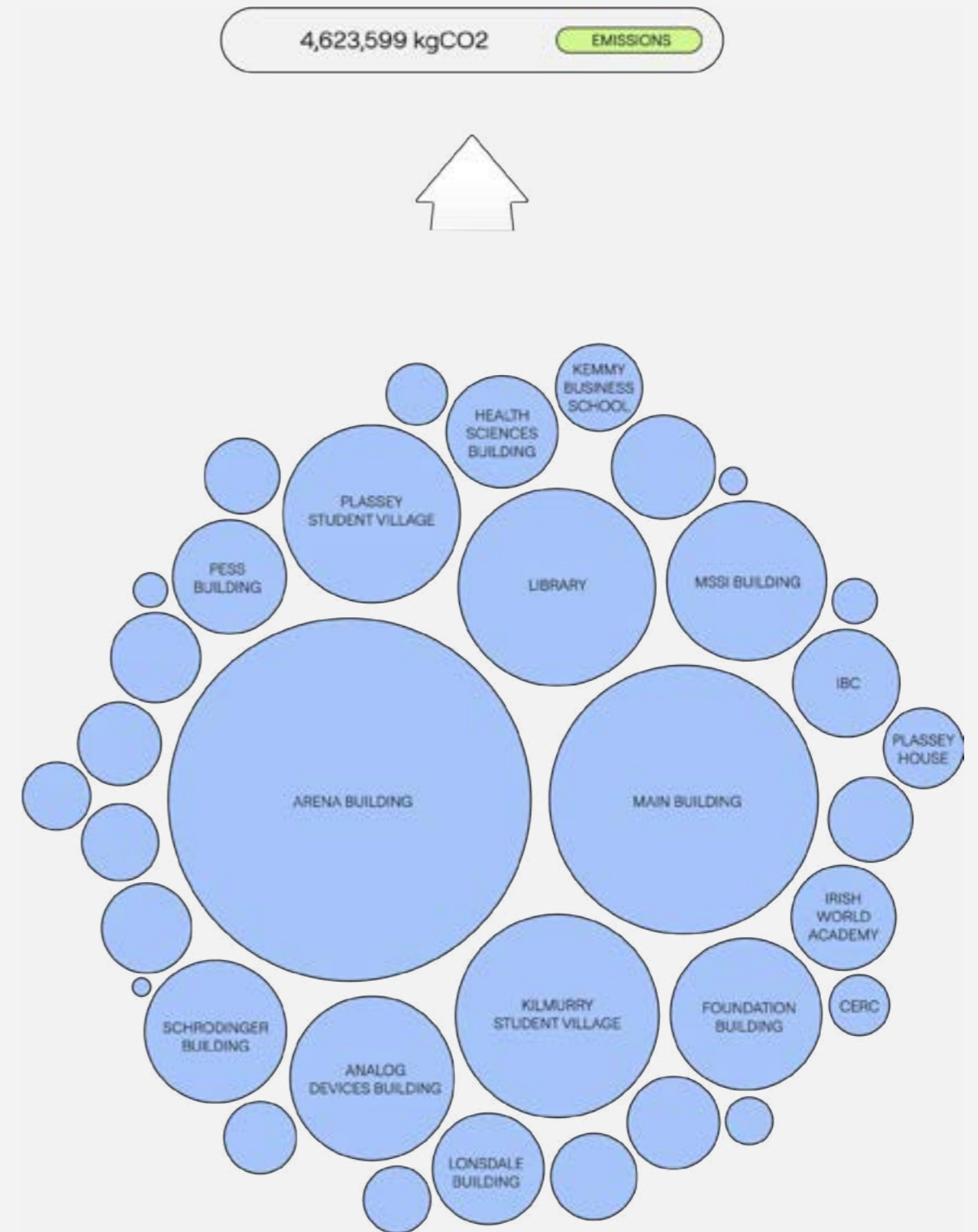
## Electrical emissions of campus buildings account for 17% of total emissions.

Buildings' electrical carbon emissions come from the use of electricity to power appliances, lighting, and other equipment within the building. The amount of electrical carbon emissions a building produces can depend on several factors, including the size of the building, the number of occupants, and the types of equipment and appliances in use.

The type of electricity used by a building can also impact its carbon emissions. If a building is powered by electricity generated from fossil fuels such as coal or natural gas, its carbon emissions will be higher than a building powered by renewable sources such as solar or wind energy.

Therefore, it is important for UL to not only focus on reducing our overall electricity consumption but also to transition to renewable energy sources to further reduce our carbon footprint.

Today, around 65% of our electricity is derived from renewable sources. This number is projected to rise to nearly 100% renewables by 2030. The decarbonisation of the grid will see UL's electrical carbon emissions drop massively without the need for any major interventions by the university.



# Baseline Analysis: Transport

## Student and staff commuting accounts for 15% of total emissions.

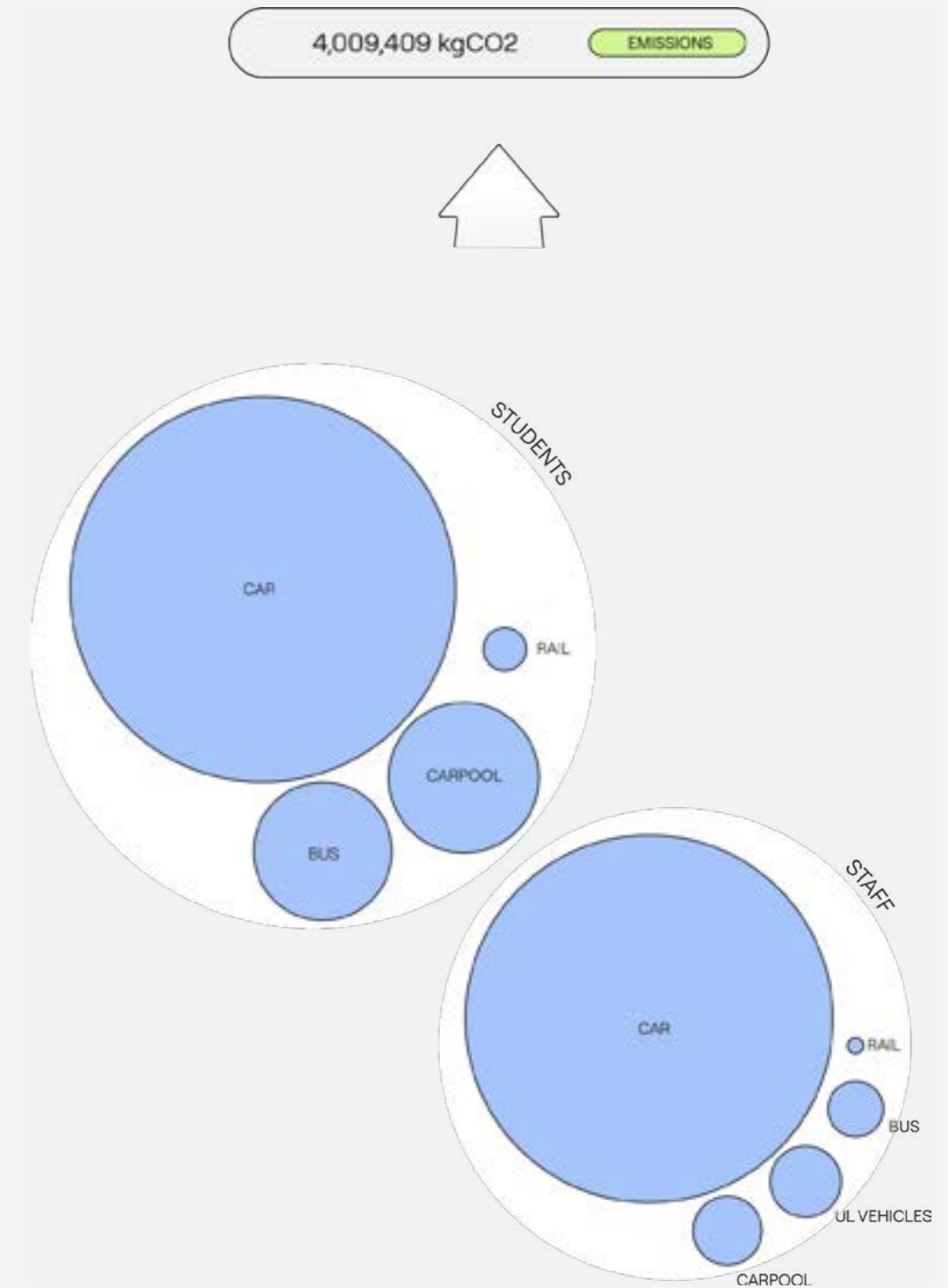
Nearly 70% of students and 25% of staff either walk, cycle or take the bus. In contrast nearly 29% of students and 74% of staff either drive or car share to and from UL. Carbon emissions from student car commutes are the highest out of all the modes of transport, even though only a third of the student populations drives. That's over 5,000 students commuting by single-occupancy car.

When asked to indicate their preferred means of traveling to UL if no barriers existed 66% of students and 74% of staff said their preferred mode would be to either walk, cycle or take the bus.

By promoting sustainable transportation modes, incentivising sustainable transportation options, purchasing only zero-emission vehicles where available and operationally feasible, and focusing on the design of our campuses, we can make significant strides towards achieving carbon neutrality.

A variety of hard measures have been completed in recent years to incentivise staff and students to commute to UL either on foot or by bike. Such measures include the resurfacing of shared pedestrian cycle paths. Newly installed paths link existing cycling paths to the UL Boathouse from where a riverside cycle all the way into the city can be enjoyed. Other infrastructure improvements include the installation of centrally located covered and secured covered bicycle parking and showering facilities. New buildings now include showers as standard.

We encountered a significant challenge in accurately assessing the emissions resulting from staff air travel. The primary reason for this limitation is the lack of comprehensive and reliable data on staff air travel activity. The baselining process requires us to consolidate information on travel distances, flight frequency, and specific routes taken. Additionally, some travel may be funded through external sources such as research grants, further complicating the data collection process. As a result, we have decided not to include air travel emissions in our baseline calculations for the time being. We will work towards developing a more robust data collection system in the future to accurately measure and report air travel emissions.





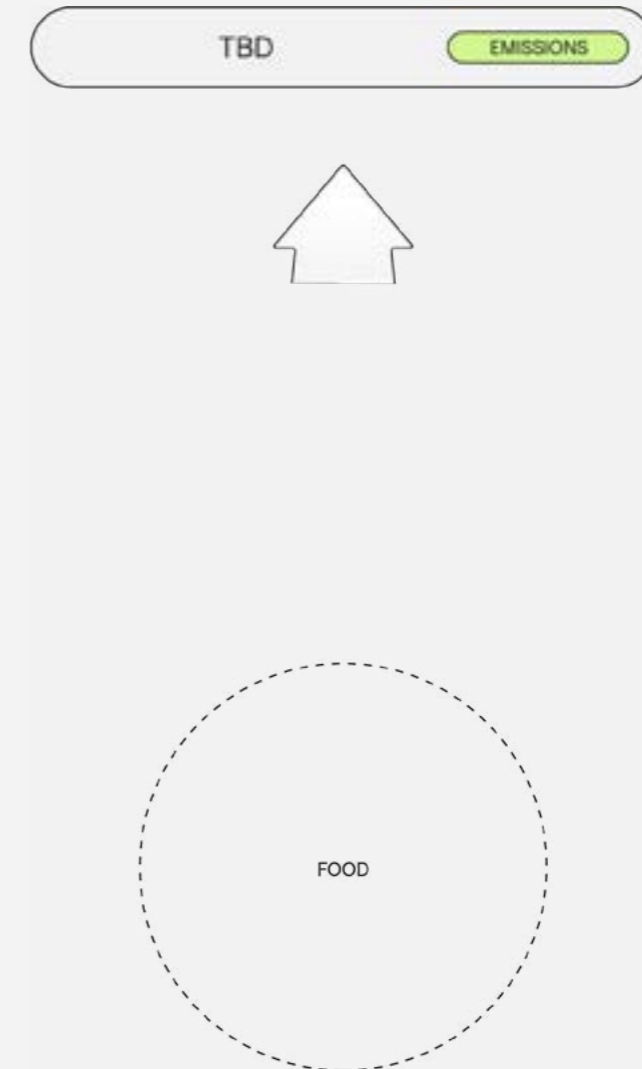
# Baseline Analysis: Food

**We currently have no data regarding food consumed and produced on campus, and its impact on carbon emissions.**

Food production and distribution systems are responsible for approximately 25% of global greenhouse gas emissions, with livestock production alone contributing to roughly 14.5% of emissions. This means that universities, as large consumers of food, can play a key role in reducing emissions related to food.

There are several ways that universities can work towards reducing the carbon footprint of their food consumption and production. One strategy is to source food locally and seasonally, which can help to reduce the emissions associated with transportation and refrigeration. By partnering with local farmers and producers, universities can support local economies while also reducing emissions.

In addition, universities can promote sustainable food choices through education and awareness campaigns. This can include providing information on the environmental impacts of different food choices and offering plant-based menu options.



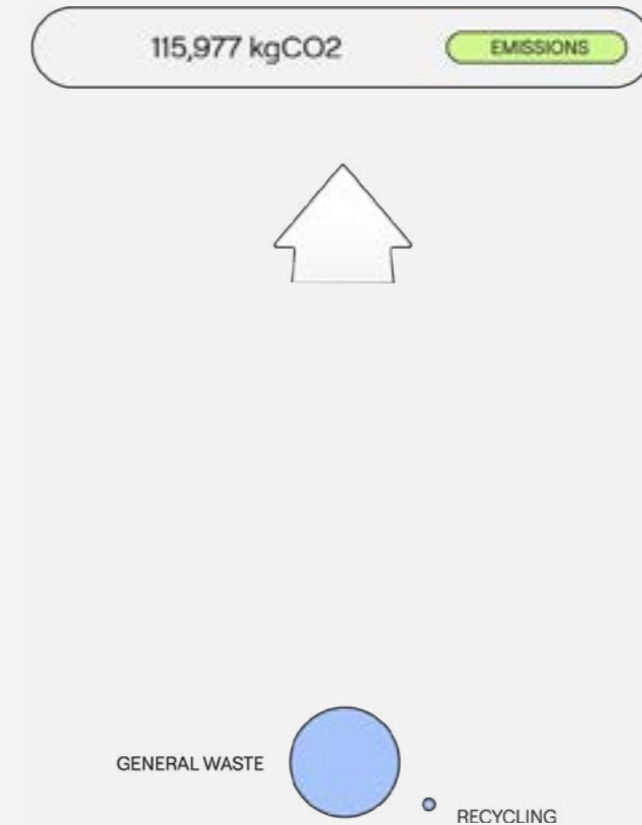
# Baseline Analysis: Waste

## Waste related emissions account for less than 1% of total emissions.

In September 2020 the government published A Waste Action Plan for a Circular Economy, Ireland's new roadmap for waste planning and management. One overarching objective of the Waste Action Plan is to shift the focus away from waste disposal and treatment to ensure materials and products remain in active use for longer thereby preventing waste.

While waste disposal and treatment may not be a significant contributor to carbon emissions, it is still an important consideration for several reasons. Universities have a responsibility to act as role models for their students, staff, and surrounding communities. This means promoting sustainable practices and reducing waste is an important part of leading by example and promoting environmental stewardship.

The primary driver of biodiversity loss, deforestation, water stress and greenhouse gas emissions is extraction of resources, the majority of which are wasted.



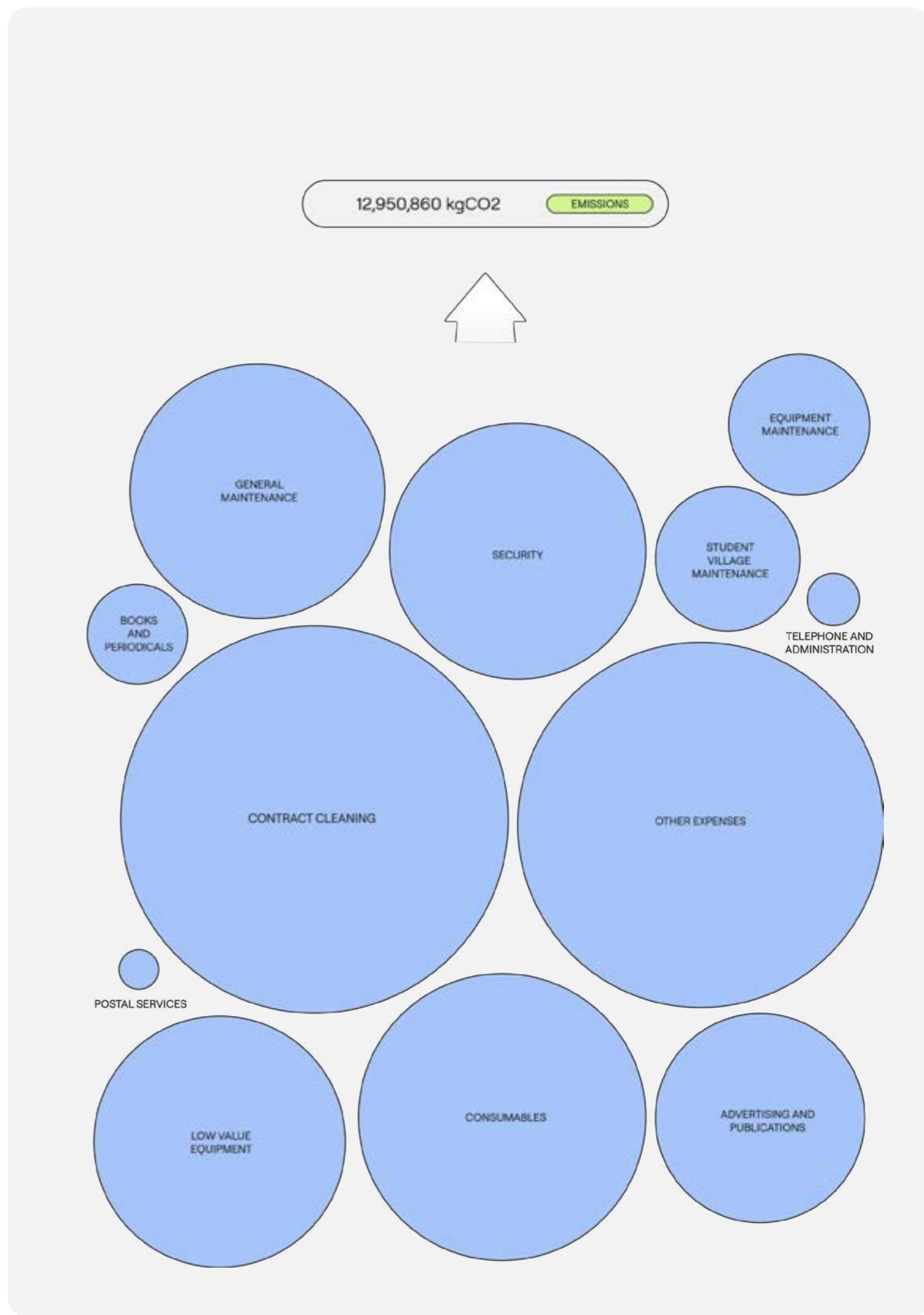
# Baseline Analysis: Procurement

## Procurement of goods and services accounts for 48% of total emissions.

Procurement of goods and services has a massive impact on the university's indirect carbon emissions. Indirect carbon emissions are emissions that occur as a result of the university's activities but are not under its direct control. These emissions can be associated with the production, transportation, and disposal of goods and services that are purchased by the university.

For example, when UL purchases paper for its offices and classrooms, the indirect carbon emissions associated with that purchase would include the emissions from the production of the paper, the transportation of the paper to the university, and the disposal of the paper after it is used.

By carefully selecting and procuring sustainable goods and services, we can reduce our indirect carbon emissions and promote sustainability throughout our supply chains. This can include selecting suppliers who prioritise sustainable practices, such as using renewable energy sources, reducing waste, and reducing emissions. It can also involve choosing products and services that are made from sustainable materials or have a reduced environmental impact.





# Baseline Analysis: Nature

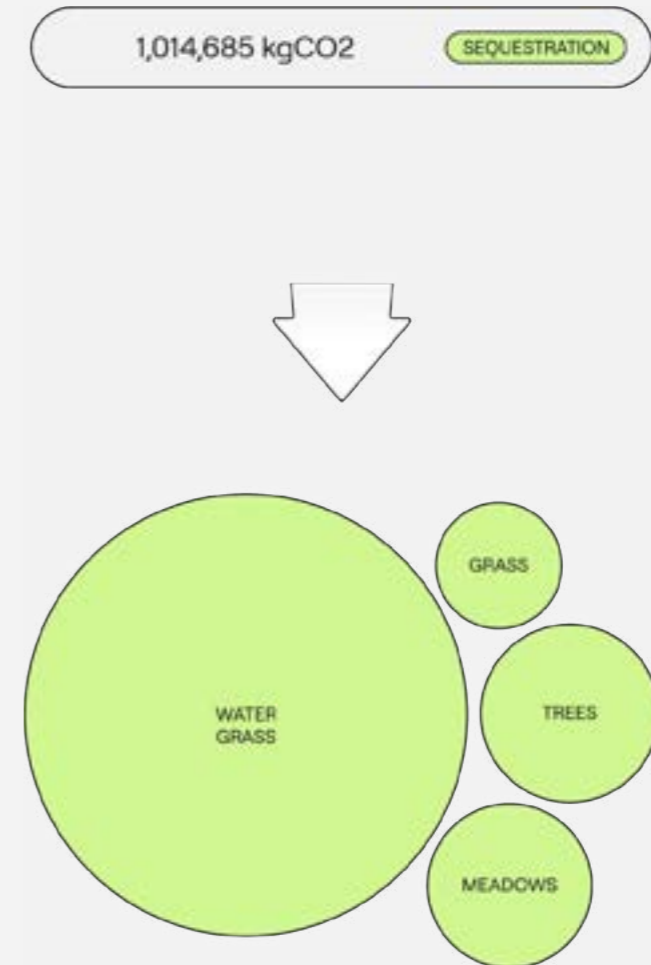
## Terrestrial and aquatic carbon sinks on campus absorb around 4% of total carbon emissions.

Carbon sinks are natural or man-made systems that absorb and store carbon dioxide (CO<sub>2</sub>) from the atmosphere. They can be terrestrial (e.g. forests, wetlands, and grasslands) or aquatic (e.g. oceans, rivers, and lakes).

It is important to note that while carbon sinks can help offset carbon emissions, they cannot fully compensate for the amount of carbon dioxide released through human activities on campus. Therefore, it is crucial to reduce carbon emissions as well as increase carbon sinks to achieve our mission of becoming carbon neutral.

UL's 366 acre estate has developed around the Victorian 'open parkland' associated with Plassey House, a 19th Century building. In recent years the campus has extended northwards into County Clare with the River Shannon now running through the center of the estate. The result is a diverse landscape ranging from riparian meadows and woodland to manicured lawns, top quality sports facilities and high quality pedestrian zones around the built environment.

Of the many important habitats to be found on campus the Lower Shannon Region Special Area of Conservation is one of the most significant. The woodland along the River Shannon and particularly on the north bank and islands is an example of one of Ireland's rarest woodland types.



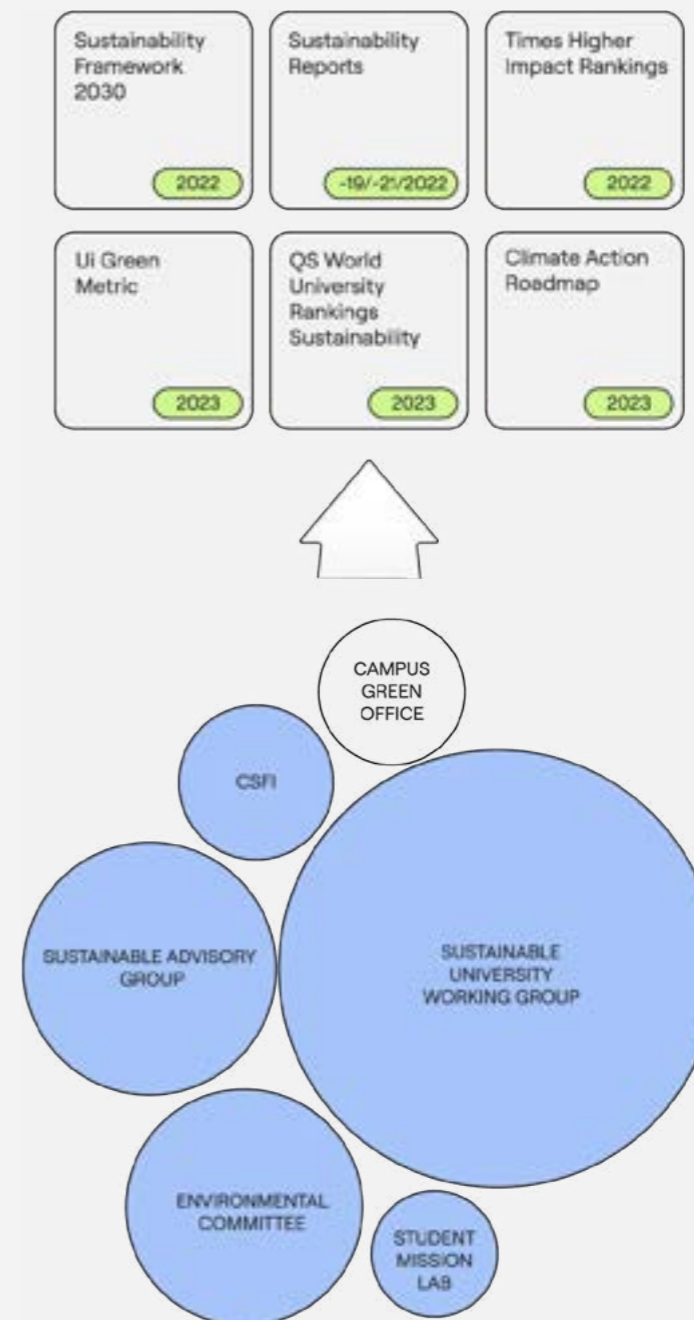
# Baseline Analysis: Governance

As institutions with significant resources and influence, universities have a responsibility to lead by example and prioritise sustainability in their operations, research, and education.

University of Limerick has established dedicated sustainability groups and committees that can oversee and coordinate sustainability efforts across different departments and stakeholders. These include Sustainable University Working Group, Centre for Sustainable Futures and Innovation, Mission Lab, Environmental Committee, and the soon to be established Sustainability Advisory Group and Campus Green Office.

These groups collaborate in developing sustainability strategies and action plans that set ambitious missions and goals, such as becoming carbon neutral, and outline the steps needed to achieve these goals. They also monitor and report on the university's progress towards meeting these goals, and engage with stakeholders such as students, faculty, and staff to ensure their buy-in and participation.

Another effective top-down intervention that is in development is the adoption of green procurement policies that prioritise the purchase of environmentally friendly products and services. This can include sourcing sustainable and locally produced food, investing in energy-efficient equipment and technology, and selecting vendors that have environmentally responsible practices. Procurement policies can also prioritise the purchase of goods and services from vendors that prioritise sustainability and social responsibility.



# Baseline Analysis: Culture

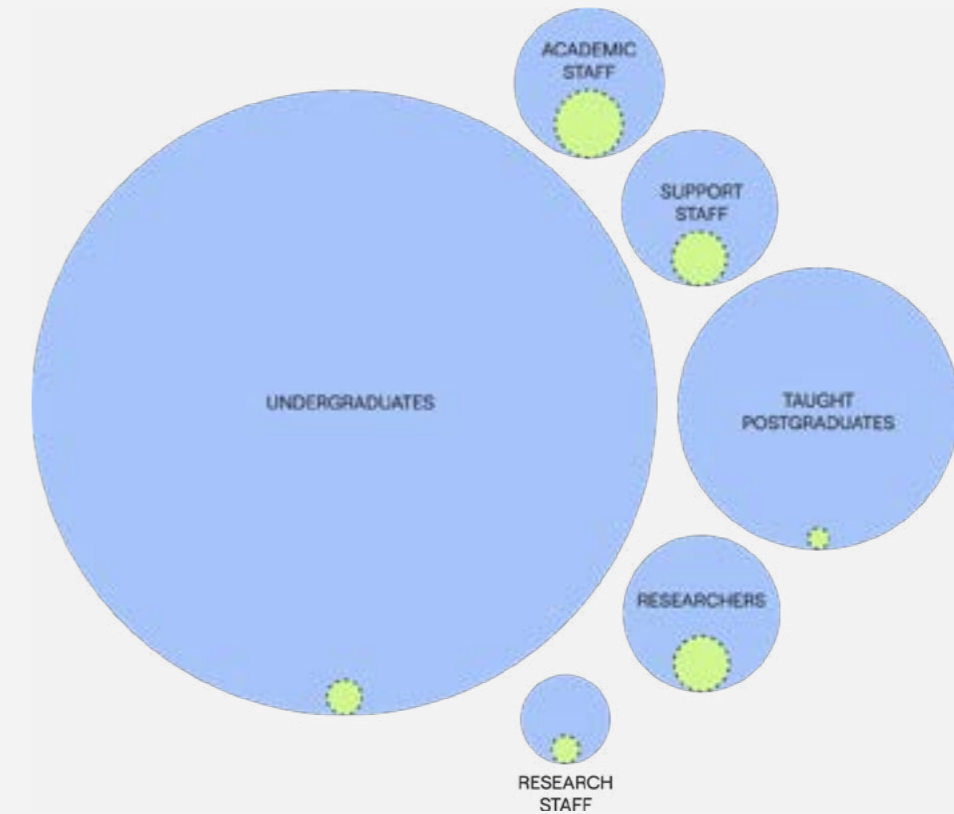
As an institution with a large population of students, faculty, and staff, UL has the potential to create a culture of sustainability that can influence behaviour and decision-making beyond the campus.

Our sustainability groups and committees are already promoting sustainability education and awareness campaigns. This includes incorporating sustainability into the curriculum and encouraging students to participate in sustainability-related activities and initiatives. Sustainability awareness campaigns are also in progress and targeted towards faculty and staff, to promote a culture of sustainability across the university community.

The Centre for Sustainable Futures and Innovation has already hosted workshops with several university departments and stakeholders. The aim of these workshops is to share the university's strategy for sustainability (mainly through the Mission-Framework) and make sure everyone is aware of the university's commitment to a sustainable future.

Staff training is another approach that we are looking to expand on. These training sessions will provide individuals with the knowledge and skills needed to understand sustainability issues and make informed decisions that support the university's carbon neutrality mission. The sessions can cover a range of topics, from energy conservation to waste reduction and sustainable procurement.

To foster a culture of action and sustainability within the student community, the university must actively involve students as agents of change and co-designers of solutions. This action-oriented approach includes incorporating experiential learning into the curriculum, enabling students to apply their knowledge to real-world sustainability challenges.

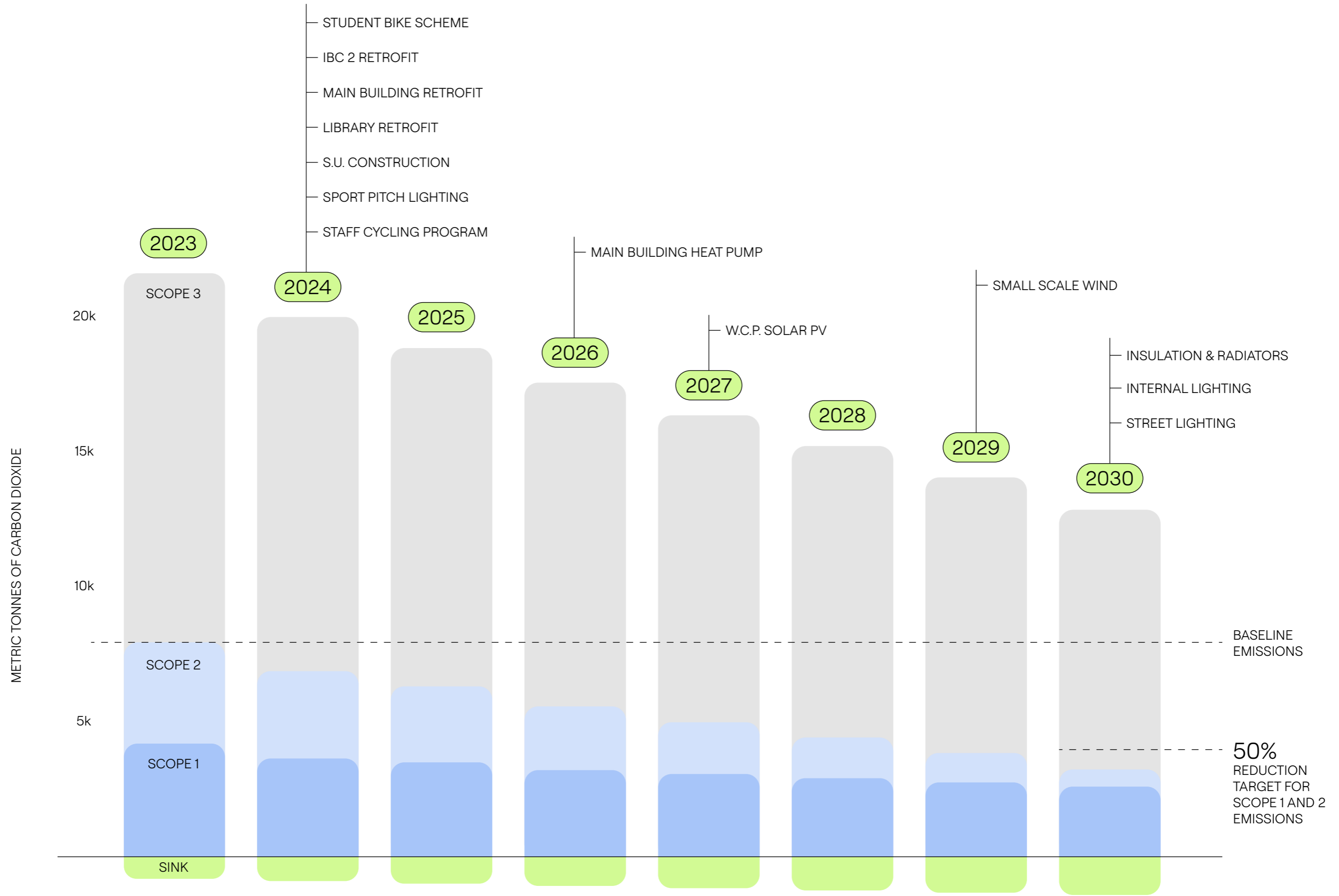






03 Mission  
Projects

# Climate Action Roadmap



# Mission Projects: Reduce Emission

## IBC Block 2 Retrofit

This project will see windows and lighting upgraded, boilers replaced (with a series of low temperature heat pumps), additional wall insulation fitted and roof-mounted solar panels installed.

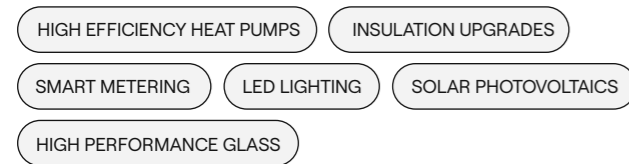
### EMISSION REDUCTION



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Implementation

### FUNDING SOURCES

Higher Education Authority (Energy Efficiency) Decarbonisation Pathfinder Programme)  
UL Sustainability / Decarbonisation Fund (TBC)

### OWNERS & PARTNERS

Buildings and Estates  
HEA  
SEAI

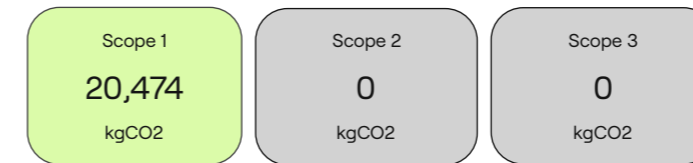
### RELATED MISSIONS

Carbon Neutral Campus  
Self-Powered Campus

## Insulation & Radiator Upgrade

This project will see uninsulated pipework and valves in boiler houses fitted with lagging jackets. Furthermore fan assisted nZEB radiators which are circa 10% more efficient than existing steel panel radiators will be trialed with a view to deploying at a larger scale if successful.

### EMISSION REDUCTION



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Proof of Concept

### FUNDING SOURCES

UL Sustainability / Decarbonisation Fund (TBC)

### OWNERS & PARTNERS

Buildings and Estates

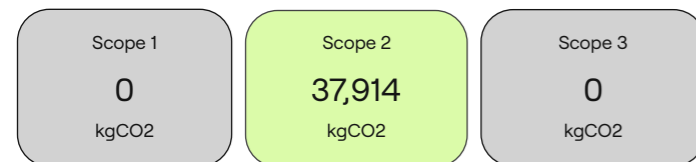
### RELATED MISSIONS

Carbon Neutral Campus

## Campus Street Lighting Upgrade

This project will see street lighting on campus replaced with high efficiency LED upgrades. Sample projects will be undertaken to determine the most cost efficacious methods of upgrading to LED.

### EMISSION REDUCTION



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Proof of Concept

### FUNDING SOURCES

UL Sustainability / Decarbonisation Fund (TBC)

### OWNERS & PARTNERS

Buildings and Estates

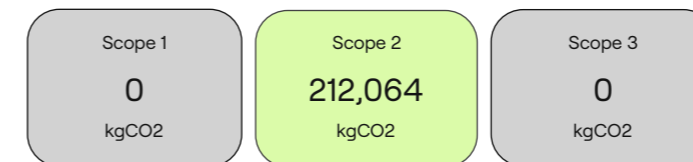
### RELATED MISSIONS

Carbon Neutral Campus

## Campus Internal Lighting Upgrade

This project will see street lighting on campus replaced with high efficiency LED upgrades. Sample projects will be undertaken to determine the most cost efficacious methods of upgrading to LED.

### EMISSION REDUCTION



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Proof of Concept

### FUNDING SOURCES

UL Sustainability / Decarbonisation Fund (TBC)

### OWNERS & PARTNERS

Buildings and Estates

### RELATED MISSIONS

Carbon Neutral Campus

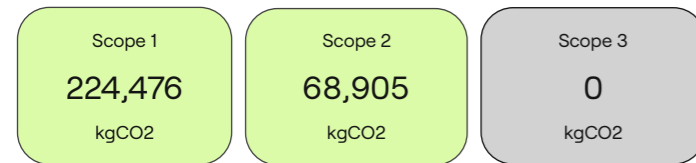


# Mission Projects: Reduce Emission

## Main Building Retrofit (Blocks C, D, E)

This project will see the primary heat source for this building replaced with a high temperature heat pump, roof and wall insulation and lighting upgraded, and BMS, energy metering and solar panels installed.

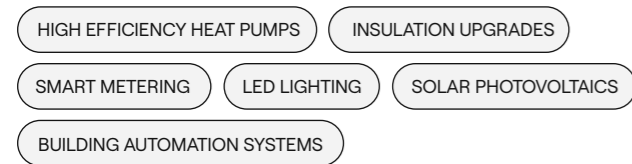
### EMISSION REDUCTION



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Concept

### FUNDING SOURCES

Higher Education Authority (Energy Efficiency) Decarbonisation Pathfinder Programme) (TBC)  
UL Sustainability / Decarbonisation Fund (TBC)

### OWNERS & PARTNERS

Buildings and Estates

HEA

SEAI

### RELATED MISSIONS

Carbon Neutral Campus  
Self Powered Campus

## Western Car Park Solar Photovoltaics

This project will see the Western Car Park, containing circa 350 car parking spaces, covered in photovoltaic solar panels. The installation will feed directly into adjacent buildings.

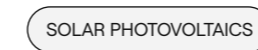
### EMISSION REDUCTION



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Concept

### FUNDING SOURCES

UL Sustainability /Decarbonisation Fund (TBC)

### OWNERS & PARTNERS

Buildings and Estates

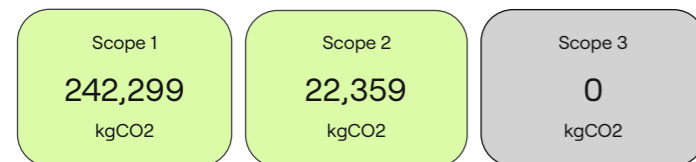
### RELATED MISSIONS

Carbon Neutral Campus  
Self Powered Campus

## Library Building Retrofit

This project will see streetlighting on campus replaced with high efficiency LED upgrades. Sample projects will be undertaken to determine the most cost efficacious methods of upgrading to LED.

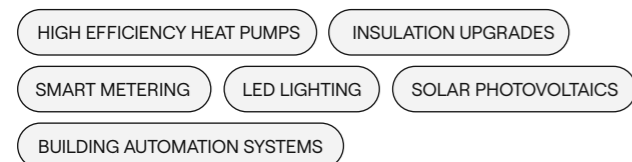
### EMISSION REDUCTION



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Concept

### FUNDING SOURCES

Higher Education Authority (Energy Efficiency) Decarbonisation Pathfinder Programme) (TBC)  
UL Sustainability /Decarbonisation Fund (TBC)

### OWNERS & PARTNERS

Buildings and Estates

HEA

SEAI

### RELATED MISSIONS

Carbon Neutral Campus  
Self Powered Campus

## Small Scale Wind

To complement the deployment of photovoltaic on campus, this project will see small scale wind turbines on site, if and where feasible.

### EMISSION REDUCTION



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Concept

### FUNDING SOURCES

UL Sustainability /Decarbonisation Fund (TBC)

### OWNERS & PARTNERS

Buildings and Estates

### RELATED MISSIONS

Carbon Neutral Campus  
Self Powered Campus

# Mission Projects: Reduce Emission

## North Bank Sports Pitches Lighting

This project will see pitch lighting on UL's north campus replaced with high efficiency LED upgrades. Careful consideration will be given to the most cost efficacious method of upgrading to LED.

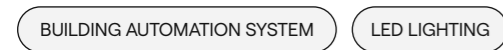
### EMISSION REDUCTION



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Design / Decision

### FUNDING SOURCES

PCC

### OWNERS & PARTNERS

Buildings and Estates

PCC

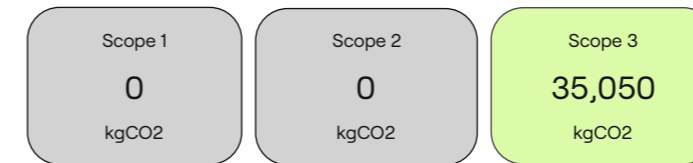
### RELATED MISSIONS

Carbon Neutral Campus

## Inclusive Sustainable Cycling

The e-bike research project to encourage modal shift in behaviours towards more sustainable transport forms. Scheme provides e-bikes free of charge to staff at the university of Limerick, to trial them over a period of 6-12 weeks.

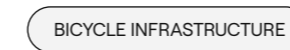
### EMISSION REDUCTION



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Implementation

### FUNDING SOURCES

Department of Transport

SEAI

### OWNERS & PARTNERS

School of Allied Health

Dept. of Electronics and Computer Engineering

Healthy UL

### RELATED MISSIONS

Active Mobility Campus

Carbon Neutral Campus

## Main Building Retrofit (Blocks A, B)

This project will see the primary heat source for this building replaced with a high temperature heat pump.

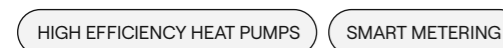
### EMISSION REDUCTION



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Proof of Concept

### FUNDING SOURCES

UL Sustainability / Decarbonisation Fund

(TBC)

### OWNERS & PARTNERS

Buildings and Estates

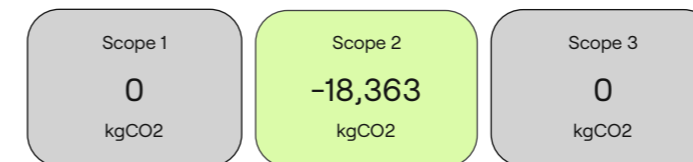
### RELATED MISSIONS

Carbon Neutral Campus

## New Student Centre Construction

This project will an NZEB building constructed to provide a space where students can relax, chill, party, play, be informed, be advised, supported, network and live life.

### EMISSION REDUCTION



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Implementation

### FUNDING SOURCES

Student Levy

University of Limerick

PCC

### OWNERS & PARTNERS

Buildings and Estates

Student Life

### RELATED MISSIONS

Carbon Neutral Campus

Campus Tribe

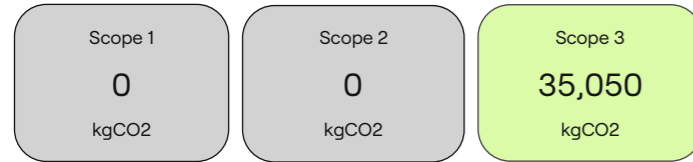
Egalitarian University

# Mission Projects: Reduce Emission

## Sustainable Student Bike Rental Scheme

This project aims to encourage students to use more sustainable modes of transport and reduce traffic on campus. It provides a bike for a student for a semester or longer, for a minimum fee.

### EMISSION REDUCTION



### FORECAST COMPLETION YEAR



### SOLUTIONS

BICYCLE INFRASTRUCTURE

### PROJECT STATUS

Implementation

### FUNDING SOURCES

Devolved Grant

### OWNERS & PARTNERS

Healthy UL

Environmental Committee

### RELATED MISSIONS

Active Mobility Campus

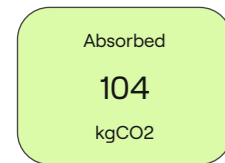


# Mission Projects: Increase Sequestration

## Small Scale Green Houses

UL has currently got a number of green houses on campus, this project will see them rejuvenated and used as a growing space on campus to encourage participation and enable hands-on-learning.

### CARBON ABSORBED



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Concept

### FUNDING SOURCES

UL Sustainability Fund (TBC)

### OWNERS & PARTNERS

Buildings and Estates

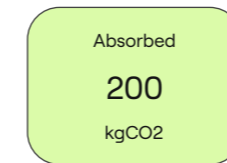
### RELATED MISSIONS

Agrihood Campus  
Carbon Neutral Campus  
Biodiverse Campus

## Biophilic Library Pilot

Biophilic design is a concept used within the building industry to increase occupant connectivity to the natural environment through the use of direct nature, indirect nature, and space and place conditions.

### CARBON ABSORBED



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Design/Decision

### FUNDING SOURCES

UL Sustainability Fund (TBC)

### OWNERS & PARTNERS

University Library  
Centre for Sustainable Futures and Innovation  
Green Campus Office

### RELATED MISSIONS

Biophilic Campus  
Carbon Neutral Campus  
Biodiverse Campus

## Green Roofs

Green roofs have a direct positive influence on local biodiversity. UL is planning to leverage its roof top spaces on campus by building and expanding on its current roof top garden.

### CARBON ABSORBED



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Concept

### FUNDING SOURCES

UL Sustainability Fund (TBC)

### OWNERS & PARTNERS

Environmental Committee  
Centre for Sustainable Futures and Innovation

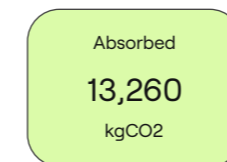
### RELATED MISSIONS

Agrihood Campus  
Carbon Neutral Campus  
Biophilic Campus

## Meadowland Rewilding

Rewilding is a progressive approach to conservation. It's about letting nature take care of itself, enabling natural processes to shape land and sea, repair damaged ecosystems and restore degraded landscapes.

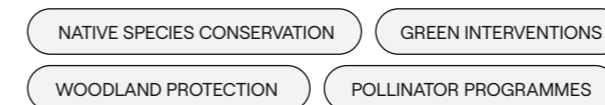
### CARBON ABSORBED



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Concept

### FUNDING SOURCES

UL Sustainability Fund (TBC)

### OWNERS & PARTNERS

Buildings and Estates  
Centre for Sustainable Futures and Innovation  
UL Apiary

### RELATED MISSIONS

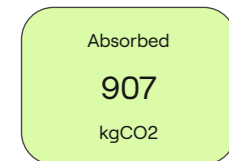
Biodiverse Campus  
Biophilic Campus  
Carbon Neutral Campus

# Mission Projects: Increase Sequestration

## Arboretum Status

UL is applying to to Arboretum Accreditation Program that provides standards for the establishment and development of an official or bona fide arboretum.

### CARBON ABSORBED



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Design/Decision

### FUNDING SOURCES

UL Sustainability Fund (TBC)

### OWNERS & PARTNERS

Buildings and Estates

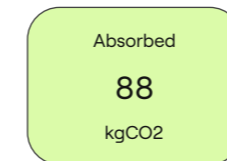
### RELATED MISSIONS

Biodiverse Campus  
Biophilic Campus  
Carbon Neutral Campus

## Pollinator Plan

UL continues to work to integrate and connect our campus with the National Pollinator Plan. Our focus is on increasing pollinator friendly planting and habitats on campus.

### CARBON ABSORBED



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Implementation

### FUNDING SOURCES

UL Sustainability Fund (TBC)

### OWNERS & PARTNERS

Buildings and Estates  
Centre for Sustainable Futures and Innovation

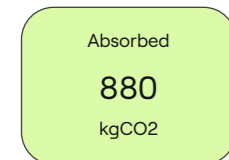
### RELATED MISSIONS

Biodiverse Campus  
Biophilic Campus  
Carbon Neutral Campus

## Campus Orchard

An orchard of fruit trees have been planted in an area to the east of Plassey House in a manner reflective of traditional parkland. It is situated in an area to take full benefit of natural light.

### CARBON ABSORBED



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Implementation

### FUNDING SOURCES

UL Sustainability Fund (TBC)

### OWNERS & PARTNERS

Buildings and Estates

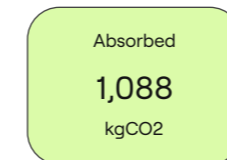
### RELATED MISSIONS

Agrihood Campus  
Biophilic Campus  
Carbon Neutral Campus

## Native Tree Planting

UL is committed to planting new native trees every year to increase carbon sinks. Our goal is to gradually increase our 13% canopy cover.

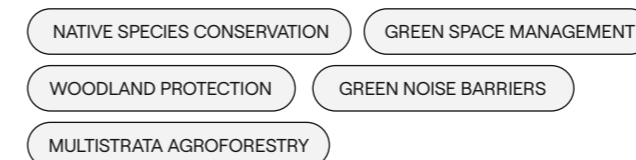
### CARBON ABSORBED



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Concept

### FUNDING SOURCES

UL Sustainability Fund (TBC)

### OWNERS & PARTNERS

Buildings and Estates

### RELATED MISSIONS

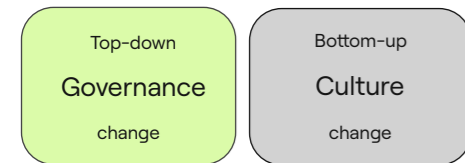
Biodiverse Campus  
Biophilic Campus  
Carbon Neutral Campus

# Mission Projects: Change Behaviours

## Sustainability Dashboard

The dashboard project will work to build a data visualisation tool that will allow UL sustainability reporting to be open and transparent. Data will be published across multiple interconnected layers.

### AREA OF CHANGE



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Design/Decision

### FUNDING SOURCES

Centre for Sustainable Futures and Innovation

### OWNERS & PARTNERS

Centre for Sustainable Futures and Innovation  
Research Office/Research Institutes  
Centre for Transformative Learning

### RELATED MISSIONS

Digital Campus Commons  
Mission Lab

## ESD Staff Program

UL staff will get an introduction to the concept of sustainability, as well as explore its relevance to HE. Staff will also identify and implement sustainability projects on campus.

### AREA OF CHANGE



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Approved

### FUNDING SOURCES

Erasmus +

### OWNERS & PARTNERS

Centre for Sustainable Futures and Innovation  
University of South-Eastern Norway  
Antwerpen University

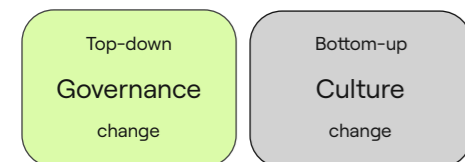
### RELATED MISSIONS

Mission Lab  
Open Loop University  
Transition Governance Framework

## University Digital Twin

Digital model of the university campus infrastructure. It will be used to simulate, test and optimize various scenarios and outcomes.

### AREA OF CHANGE



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Design/Decision

### FUNDING SOURCES

University of Limerick  
External Funds

### OWNERS & PARTNERS

Centre for Sustainable Futures and Innovation

### RELATED MISSIONS

Digital Campus Commons  
Mission Lab  
Carbon Neutral Campus

## ESD Student Program

These sessions are designed to engage students in the fundamentals of sustainability while demonstrating actionable ways of getting involved in sustainable development in their personal, professional, and academic lives.

### AREA OF CHANGE



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Concept

### FUNDING SOURCES

Centre for Sustainable Future and Innovation

### OWNERS & PARTNERS

Centre for Sustainable Futures and Innovation  
Clubs and Societies  
UL Faculty and Staff

### RELATED MISSIONS

Mission Lab  
Open Loop University



# Mission Projects: Change Behaviours

## Green Campus Week

The annual week of activities and events in conjunction with An Taisce Green Campus' Green Campus Week.

### AREA OF CHANGE



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Approved

### FUNDING SOURCES

Centre for Sustainable Futures and Innovation

### OWNERS & PARTNERS

Centre for Sustainable Futures and Innovation  
Environmental Committee & Campus Green Office  
Clubs and Societies

### RELATED MISSIONS

Campus Tribe

## Online Sustainability Community

Fostering an online community for students and staff to learn more about, and connect with, UL's sustainability portfolio and progress toward a sustainable university.

### AREA OF CHANGE



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Concept

### FUNDING SOURCES

Centre for Sustainable Futures and Innovation

### OWNERS & PARTNERS

Centre for Sustainable Futures and Innovation  
UL Marketing and Communications  
Virtual Learning Environment - Brightspace

### RELATED MISSIONS

Mission Lab  
Open Loop University  
Campus Tribe

## Student Sustainability Workshops

Workshops run with students to understand student sentiment toward sustainability, and what initiatives or projects they would like to see UL prioritise and collectively take action on.

### AREA OF CHANGE



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Concept

### FUNDING SOURCES

Centre for Sustainable Futures and Innovation

### OWNERS & PARTNERS

Centre for Sustainable Futures and Innovation  
Clubs and Societies

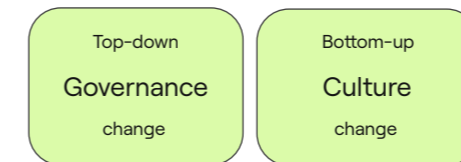
### RELATED MISSIONS

Campus Tribe

## Sustainability Video Series

'Unsung Heroes' series of videos to bring to light the action oriented work that UL sustainability advocates are carrying out across campus.

### AREA OF CHANGE



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Concept

### FUNDING SOURCES

UL Sustainability Fund (TBC)

### OWNERS & PARTNERS

Buildings and Estates

### RELATED MISSIONS

Mission Lab

# Mission Projects: Change Behaviours

## ESD Doctoral College

This doctoral program will focus on increasing students' understanding of sustainability, enabling meaningful interdisciplinary collaborations and taking action to address sustainability challenges.

### AREA OF CHANGE



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Concept

### FUNDING SOURCES

Centre for Sustainable Futures and Innovation YERUN  
Erasmus+

### OWNERS & PARTNERS

Doctoral College  
Centre for Sustainable Futures and Innovation  
YERUN Network

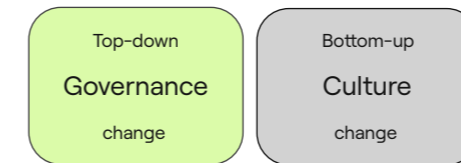
### RELATED MISSIONS

Mission Lab  
Open Loop University

## Baseline Mapping Education

This project will work to map all UL education to the UN SDGs. Enabling us to identify gaps, measure progress, connect key projects and plan new mission-based learning projects.

### AREA OF CHANGE



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Concept

### FUNDING SOURCES

Centre for Sustainable Futures and Innovation

### OWNERS & PARTNERS

Centre for Transformative Learning  
Centre for Sustainable Futures and Innovation  
Mission Lab

### RELATED MISSIONS

Digital Campus Commons  
Mission Driven Learning

## Citizens Assembly

Safe and respectful space for citizens to come together and discuss SDG focused Actions for Limerick. To provide a public focus on sustainability and SDG action in UL. Opportunity for UL staff and students to develop their public engagement skills and experience.

### AREA OF CHANGE



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Concept

### FUNDING SOURCES

UL Engage

### OWNERS & PARTNERS

UL Engage  
Limerick County Council & LPPN  
Comhairle na nóg

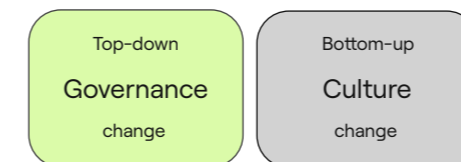
### RELATED MISSIONS

Citizens Mission Council  
Transition Governance Framework

## Baseline Mapping Research

This project will work to map all UL research to the UN SDGs. Enabling us to identify gaps, measure progress, connect key projects and plan new mission-based research projects.

### AREA OF CHANGE



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Concept

### FUNDING SOURCES

Centre for Sustainable Futures and Innovation

### OWNERS & PARTNERS

Centre for Sustainable Futures and Innovation

### RELATED MISSIONS

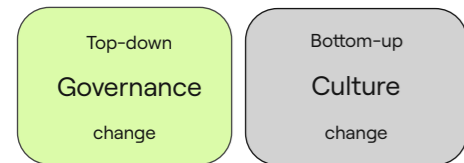
Digital Campus Commons

# Mission Projects: Change Behaviours

## Baseline Mapping Community

This project will work to map all community based initiatives connected with the UN SDGs. Enabling us to identify gaps, measure progress, connect key projects and plan new mission-based initiatives with the wider community.

### AREA OF CHANGE



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Concept

### FUNDING SOURCES

Centre for Sustainable Futures and Innovation

### OWNERS & PARTNERS

Centre for Sustainable Futures and Innovation

UL Engage

Technology Transfer Office

### RELATED MISSIONS

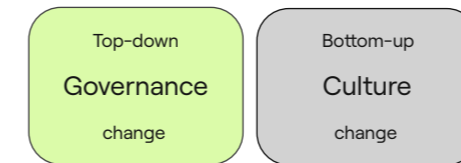
Digital Campus Commons

Citizens Mission Council

## Baseline Mapping Biodiversity

A biodiversity baseline study is the collection and interpretation of information on the biodiversity values at a site; this includes the species, habitats and ecological systems present, their current condition and their trends before a project commences.

### AREA OF CHANGE



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Concept

### FUNDING SOURCES

University of Limerick

### OWNERS & PARTNERS

Department of Geography

Centre for Sustainable Futures and Innovation

### RELATED MISSIONS

Digital Campus Commons

Biodiverse Campus

## Sustainability Scholars Scheme 2022

The Faculty of Science & Engineering is supporting collaborative, transformative and interdisciplinary initiatives in sustainability by funding five structured PhD scholarships.

### AREA OF CHANGE



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Approved

### FUNDING SOURCES

Faculty of Science and Engineering

### OWNERS & PARTNERS

Faculty of Science and Engineering

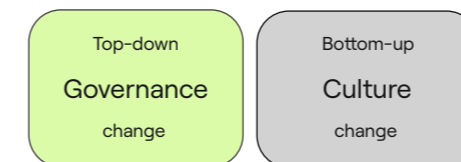
### RELATED MISSIONS

Mission Driven Learning

## Baseline Mapping Policy

Baseline study of policies at UL to support the design and development of a portfolio of sustainability related policies.

### AREA OF CHANGE



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Concept

### FUNDING SOURCES

University of Limerick

### OWNERS & PARTNERS

Centre for Sustainable Futures and Innovation

Sustainable University Working Group

Policy Hub

### RELATED MISSIONS

Digital Campus Commons

Transition Governance Framework



# Mission Projects: Change Behaviours

## ESD Beekeeping Course

8 Week Intensive Bee Keeping Course. Teach staff and students to start their own hives.

### AREA OF CHANGE



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Implementation

### FUNDING SOURCES

Environmental Committee

### OWNERS & PARTNERS

Environmental Committee

The Banner Beekeeping Association

UL Apiary

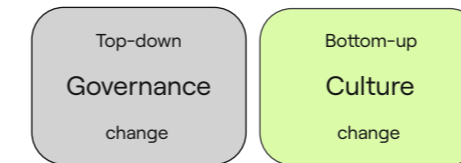
### RELATED MISSIONS

Biodiverse Campus

## Sustainability Literacy Libguide

The library is leading on the creation of resources and academic content in the areas of climate literacy, biodiversity, energy, food production and agriculture.

### AREA OF CHANGE



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Concept

### FUNDING SOURCES

University of Limerick

### OWNERS & PARTNERS

Glucksman Library at UL

Centre for Sustainable Futures and Innovation

Sustainable University Working Group

### RELATED MISSIONS

Mission Driven Learning

## Sustainability Challenge

An interfaculty competition which calls on students to submit ideas to make our environment more sustainable – to either the campus, the city or wider Mid-West region or further afield.

### AREA OF CHANGE



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Implementation

### FUNDING SOURCES

University of Limerick

### OWNERS & PARTNERS

Bernal Institute & Research Office

Faculty of Science and Engineering & KBS

Buildings and Estates

### RELATED MISSIONS

Mission Lab

## Energy Behaviour Change Campaign

This project will see Buildings & Estates, the OPW and both existing and new Green Teams continue and expand the roll-out of the Optimising Power at Work initiative.

### AREA OF CHANGE



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Implementation

### FUNDING SOURCES

UL Sustainability Fund (TBC)

### OWNERS & PARTNERS

Buildings & Estates

Office of Public Works

Green Teams

### RELATED MISSIONS

Carbon Neutral Campus

# Mission Projects: Change Behaviours

## Display Energy Certificate

Display an up-to-date Display Energy Certificate in every public building that is open to the public to clearly show energy use.

### AREA OF CHANGE



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Design/Decision

### FUNDING SOURCES

University of Limerick

### OWNERS & PARTNERS

Buildings and Estates

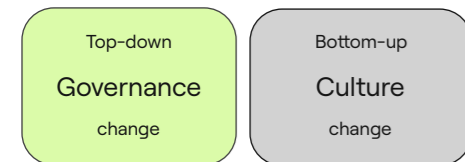
### RELATED MISSIONS

Carbon Neutral Campus

## EMS Accreditation

Achieve formal environmental accreditation for large public sector bodies, such as ISO 50001 (Energy Management Standard) or ISO 14001 (Environmental Management System).

### AREA OF CHANGE



### FORECAST COMPLETION YEAR



### SOLUTIONS



### PROJECT STATUS

Concept

### FUNDING SOURCES

University of Limerick

### OWNERS & PARTNERS

Buildings and Estates

SEAI

### RELATED MISSIONS

Carbon Neutral Campus

# Portfolio Overview



MEADOWLAND REWILDING

INSULATION AND RADIATORS

NATIVE TREE PLANTING

POLLINATOR PLAN

SMALL SCALE GREEN HOUSES

CAR PARK SOAL PV

ARBORETUM STATUS

CAMPUS ORCHARD

SMALL SCALE WIND

IBC 2 RETROFIT

STUDENT BIKE SCHEME

MAIN BUILDING RETROFIT

INTERNAL LIGHTING

GREEN ROOFS

LIBRARY RETROFIT

BIOPHILIC LIBRARY PILOT

STUDENTS UNION CONSTRUCTION

STREET LIGHTING

SPORT PITCH LIGHTING

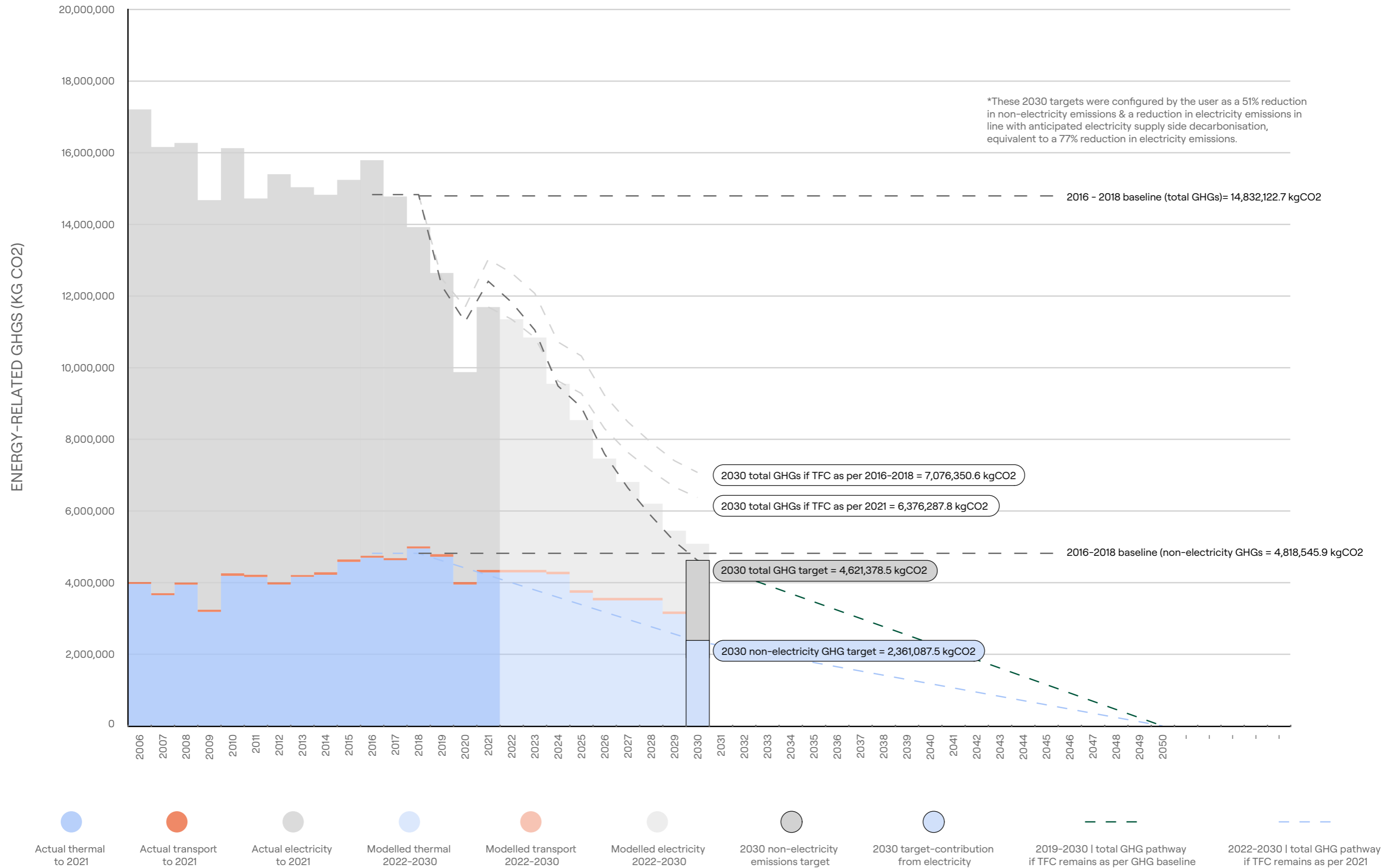
STAFF CYCLING PROGRAM



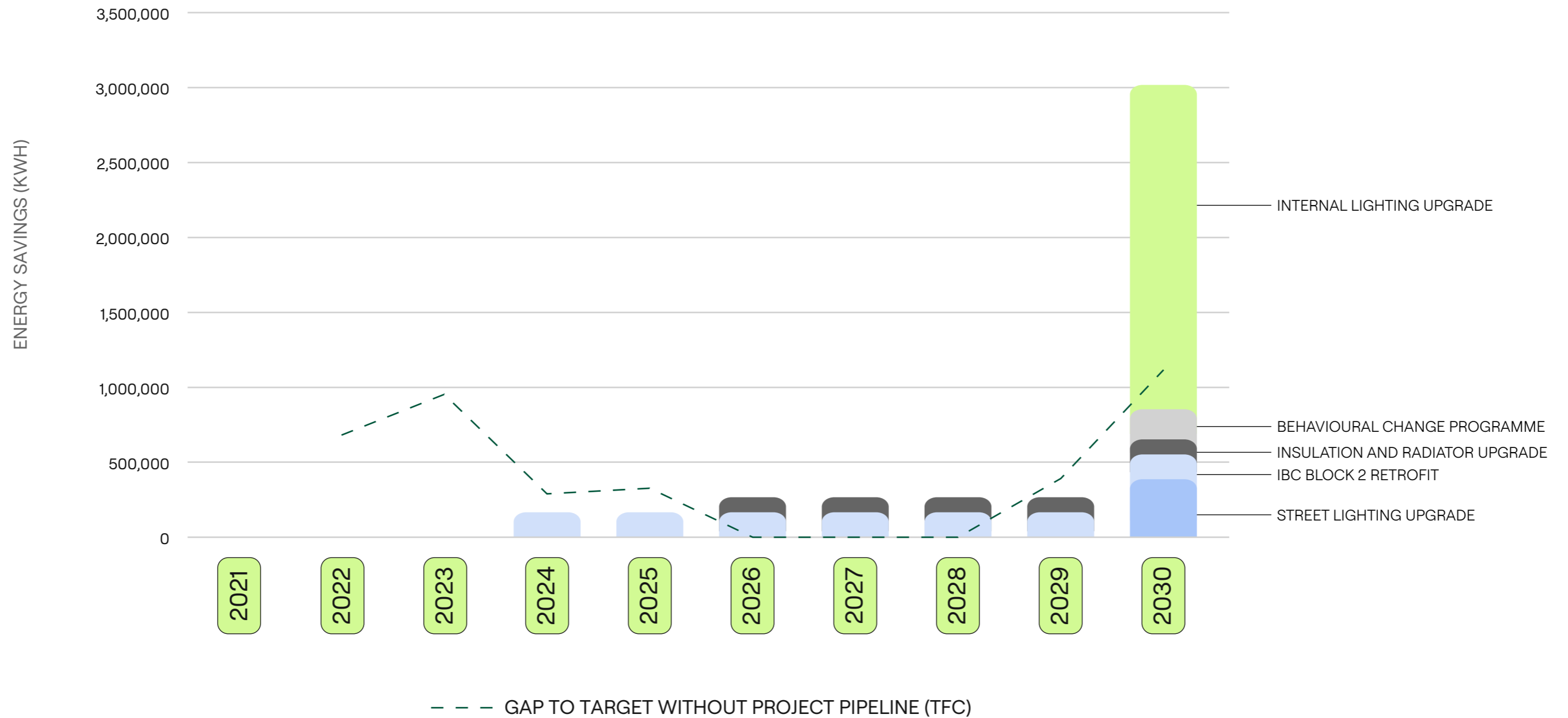
# 04 Appendix

# Gap to Target Tool

## Total GHG Pathways and Targets



# Gap to Target Tool Energy Efficiency Scenario





# Climate Action Mandate Requirements

## SECTION 2.1 OUR PEOPLE

Nominate a member of the Management Board as the Climate and Sustainability Champion with responsibility for implementing and reporting on the mandate.

Page(s) in this document

19

## SECTION 2.1 OUR PEOPLE

Establish and resource Green Teams, reporting to senior management, to become integrated drivers of sustainability in every public sector body.

Page(s) in this document

19 - 22

## SECTION 1.5 REPORTING

Report GHG emissions and sustainability activities in the annual report.

Page(s) in this document

23 - 26

## SECTION 2.1 OUR PEOPLE

Organise staff workshops (at least annually) to engage on climate issues, including a focus on decreasing the organisation's carbon footprint.

Page(s) in this document

79 - 90

## SECTION 2.1 OUR PEOPLE

Incorporate appropriate climate action and sustainability training (technical and behavioural) into learning and development strategies for staff.

Page(s) in this document

79 - 90

## SECTION 2.2 OUR TARGETS

Reduce GHG emissions by 51% in 2030.

Page(s) in this document

65-74,95

## SECTION 2.2 OUR TARGETS

Increase the improvement in energy efficiency in the public sector from the 33% target in 2020 to 50% by 2030.

Page(s) in this document

65-74,97

## SECTION 2.3 OUR WAY OF WORKING

Achieve formal environmental accreditation for large public sector bodies, such as ISO 50001 or ISO 14001, with a view to achieving EMAS ISO 14001.

Page(s) in this document

89

## SECTION 2.3 OUR WAY OF WORKING

Review any paper-based processes and evaluate the possibilities for digitisation so it becomes the default approach.

Page(s) in this document

23 - 26

## SECTION 2.4 OUR BUILDINGS AND VEHICLES

Purchase only zero-emission vehicles where available and operationally feasible from end of 2022.

Page(s) in this document

49

## SECTION 2.4 OUR BUILDINGS AND VEHICLES

The public sector will not install heating systems that use fossil fuels after 2023 (except in specific circumstances set out in the mandate).

Page(s) in this document

45

## SECTION 2.4 OUR BUILDINGS AND VEHICLES

Display an up-to-date Display Energy Certificate in every public building that is open to the public to clearly show energy use.

Page(s) in this document

89

## SECTION 2.4 OUR BUILDINGS AND VEHICLES

Create bicycle friendly buildings for employees and visitors, by putting bicycle parking in place by 2022.

Page(s) in this document

49

# Recommendations to Government

In order to enable Higher Education Institutions to effectively deliver upon this climate action mandate, we have drafted a series of recommendations.

These recommendations aim to address issues of agency and autonomy, whereby even when an institution might have the will to lead, there are significant barriers to progress. These recommendations are also made with the intrinsic understanding that generational leadership is required from our universities, and the creation of the necessary enabling conditions is also expected from government.

These recommendations build on the existing and obvious needs for increased long-term funding, policy alignment measures across domains and scales of impact, cross-sectoral support and an ongoing communications and engagement programme.

1. Net Zero Interdependence Framework
2. Indirect Emissions Standard
3. Higher Education Green Marketplace
4. Strategic Foresight Programme
5. Open Data Commons
6. Carbon Sink Strategic Framework
7. Carbon Handprint Framework
8. Carbon Avoidance Policy
9. Good Ancestor Fund
10. Carbon Neutral Cabinet

## 1. NET ZERO INTERDEPENDENCE FRAMEWORK

Develop a National Net Zero Interdependence Framework that supports the ability to define and clarify the systemic relationships that limit institutional agency. The framework should provide a set of tactical patterns for addressing intractability in the form of ecosystem response archetypes versus university-centred action alone.

## 2. INDIRECT EMISSIONS STANDARD

Develop a Higher Education-specific Indirect Emissions Standard (Scope 3) that meaningfully contextualises the broader Scope 3 Standard to the specific needs and realities of university operations to accelerate the identification and actioning of appropriate measures.

## 3. HIGHER EDUCATION GREEN MARKETPLACE

Support the development of a National Higher Education Green Marketplace that incentivises the innovation required to produce meaningful alternatives to current purchasing of goods and services.

## 4. STRATEGIC FORESIGHT PROGRAMME

Conduct a national Strategic Foresight Programme that supports HEIs in developing a variety of contextually relevant scenarios for carbon neutrality. Use this process to also explore opportunities for long term resilience across our institutions.

## 5. OPEN DATA COMMONS

Initiate a national Open Data Commons where progress across Scope 1, 2 & 3 emissions in higher education institutions as well as other public bodies is made transparent and available in as close to real time as possible.

## 6. CARBON SINK STRATEGIC FRAMEWORK

Develop a Carbon Sink Strategic Mandate that compliments the emissions-focussed perspective that dominates carbon neutrality. This additional focus on carbon drawdown should be viewed as a necessary measure for universities irrespective of level of emissions achieved.

## 7. CARBON HANDPRINT FRAMEWORK

Develop a Carbon "Handprint" Framework that measures and incentivises the carbon positive action associated with carbon sequestration of all kinds. Where carbon footprint is a measure of our emissions, carbon handprint would be a measure of our drawdown impacts.

## 8. CARBON AVOIDANCE POLICY

Develop a Carbon Avoidance Policy to support HEIs in leveraging the embodied carbon of existing built environment for future expansion plans. This national anti-dereliction directive should greatly incentivise the regeneration of existing stock in our cities and towns.

## 9. GOOD ANCESTOR FUND

Launch a Good Ancestor Fund to incentivise long-term strategic action with delayed reward release. This would incentivise intergenerational solidarity across organisations and counteract short political cycles and strategy redefinition often intrinsic to leadership transitions.

## 10. CARBON NEUTRAL CABINET

Realise a Carbon Neutral Cabinet in Dáil Éireann as a matter of urgent role modelling.

