Ollscoil na Gaillimhe
University of Galway

Climate Action Roadmap 2030

June 2024 update

University of Galway.ie

Contents

Approved by

Prof. Ciarán Ó hÓgartaigh, University President	6 June 2024
Prof. Peter McHugh, Deputy President & Registrar (Climate & Sustainability Champion)	31 May 2024

Executive Summary

The Climate Action and Low Carbon Development (Amendment) Act 2021, through the Government's Climate Action Plans, requires public sector bodies to achieve certain climate targets and undertake certain actions known as the 'Climate Action Mandate'. The University of Galway must publish out a Climate Action Roadmap to demonstrate our vision, coordination, organisation, mobilisation and planning for these targets and actions. This document is an updated roadmap to reflect the Climate Action Mandate 2024 and focuses on these specific requirements. Further information on our broader sustainability work is available here.

The University is strongly committed to sustainability and climate action, a core value of the University's strategy. The University Management Team has undertaken climate action training and has adopted a policy which sets out the roles of senior management. The Deputy President & Registrar is the University's Climate and Sustainability Champion, responsible for implementing and reporting on the Climate Action Mandate. The University has established a Sustainability Office, led by the Director of Sustainability, to implement an ambitious sustainability strategy. Our green team also includes an expert energy team in Buildings & Estates and the wider Community & University Sustainability Partnership. Significant engagement, education and training takes place with the wider University community.

The University has achieved an enormous amount through the dedication and expertise of our green team and community engagement. Since 2006, we have improved our energy efficiency by almost 50%, on the cusp of achieving the 2030 public sector target. Meanwhile, we have reduced greenhouse gas emissions by 47% since 2006 (or by 35% compared to our 2016-2018 baseline). These figures are all the more impressive considering the expansion in our student population and facilities in recent years. We aim to exceed our public sector targets in these areas and we have identified a number of carbon reduction projects and programmes; these will require funding to proceed. Our award-winning energy team has demonstrated our capacity to deliver innovative, sustainable projects and we look forward to continuing our collaborations with funding agencies in Ireland and internationally.

We have also implemented the other requirements of the Climate Action Mandate in areas such as energy management systems, digitalisation of processes, green procurement, low-carbon construction, food waste, water, waste, single-use items, sustainable transport and sustainable buildings. As we approach the end of our current University strategy and sustainability strategy, we are currently reflecting on progress and engaging the University community on our next University strategy and sustainability strategy to 2030. These strategies will be mindful of the urgency of climate action, Ireland's climate ambitions and the leading role played by the University of Galway.

1. Introduction

1.1. Background

The Climate Action and Low Carbon Development (Amendment) Act 2021 and the Government's Climate Action Plans require public bodies to achieve certain climate targets and undertake various actions, known as the Public Sector 'Climate Action Mandate' (Appendix 1). The Government's Climate Action Plan 2024, including an updated Climate Action Mandate, was published on 20 December 2023, followed by guidance in SEAI (2024).

One of the central requirements of the Climate Action Mandate is the publication of a Climate Action Roadmap, the purpose of which is "to encourage strategic vision, coordination, organisation, mobilisation, and planning by each organisation" (SEAI, 2024). The Climate Action Roadmap must include progress on greenhouse gas emissions reduction, energy efficiency improvement and the other aspects of the Climate Action Mandate. The Climate Action Roadmap must be updated, submitted to SEAI and published within 6 months of the publication of the Government's Climate Action Plan.

The University of Galway is a recognised leader on sustainability and climate action, adopting targets and undertaking actions that go beyond the requirements of the Public Sector Climate Action Mandate (see Section 1.2 and Section 7). The University published its initial Climate Action Roadmap (available here). This document is an update to reflect the additional requirements arising from the 2024 Climate Action Mandate and to demonstrate the progress achieved to date.

It should be noted that the University is subject to other legal and regulatory requirements regarding climate, energy and buildings. These are listed below and incorporated in this Climate Action Roadmap.

- Climate Action and Low Carbon Development (Amendment) Act 2021, which requires all public bodies to perform their functions in a manner consistent with Ireland's climate ambition
- SI393/2021 Energy Performance of buildings, which requires installation of Building Automation and Control by 2025 for buildings with HVAC rated output over 290kW; requires installation of electric vehicle charging points in carparks for new or refurbished buildings with more than 10 car parking spaces.
- SI381/2021 Clean Vehicles Directive, which sets targets for the procurement of clean light and heavy-duty vehicles, with the first target falling in 2025 and the second in 2030. The definition of clean vehicle changes to zero emission vehicles in 2025.
- SI4/2017 Energy Performance of Buildings, which requires all new public sector buildings built since 2018 to be "nearly zero emissions".
- SI646/2016, which requires that public bodies procure only energy using products and vehicles that are on the Triple E register.
- SI426/2014, which requires the public sector to demonstrate exemplary energy management and requires public bodies to undertake energy audits every four years, and also requires that the public sector can only lease or buy buildings with BER A3 or higher.

- S.I. 292 & 183 of 2019, S.I. 243 of 2012, S.I. 872 of 2005 – European Union (Energy Performance of Buildings) Regulations 2005, 2012 & 2019
- Climate Action Plans and previous National Energy Efficiency Action Plans – i.e. National Energy Efficiency Action Plans 1, 2, 3 & 4
- Building Regulations 2021: Technical Guidance Document L – Buildings other than Dwellings Published on 7th December 2020 and updated on 12th August 2021.

1.2. Organisational context

The University of Galway has made a strong commitment to sustainability through the University Strategy 2020-2025, Climate Action and Sustainability Policy (available here) and the Sustainability Strategy 2021-2025 (available here). Using a Learn-Live-Lead framework, the Sustainability Strategy contains 120 objectives and 25 measures of success across 7 areas (research and learning, energy and GHG emissions, nature and ecosystems, built environment, health and wellbeing, governance and leadership, and communications and engagement).

The University has signed the SDG Accord, committing to embed the SDGs into our education, research, leadership, operations, administration and engagement activities. The University participates in various voluntary rating/ranking/certification schemes, such as STARS, THE Impact and Green Campus. Progress against these commitments is reported in Annual Sustainability Reports (here), including activities supporting each of the 17 SDGs. Rather than duplicating the content of the next Annual Sustainability Report, this Climate Action Roadmap focuses on the areas of direct relevance to the Climate Action Mandate.

As of June 2024, the University is midway through the development of the next University Strategy to 2030. To date, this has included engagements, a value-based survey and a workshop on sustainability. Following the publication of the University Strategy, a new Sustainability Strategy will be developed to 2030, including extensive engagement with students, staff and communities. This will be mindful of the urgency of climate action, Ireland's climate ambitions and the University's leading role. As such, the plans in this Climate Action Roadmap are dynamic as our commitments, understanding and potential solutions evolve.

1.3. Scope

GHG emissions are classified as Scope 1, Scope 2 and Scope 3. In short, for our purposes, Scope 1 includes emissions from our fuel consumption, Scope 2 includes emissions from the electricity we purchase, and Scope 3 includes other indirect emissions from e.g. commuting, business travel, procurement, new buildings. The Public Sector Climate Action Mandate covers Scopes 1 & 2 (see Targets) and these emissions must be reported to the SEAI annually (along with emissions from business travel). Scope 3, which are more challenging to measure accurately, are included in the University of Galway Carbon Footprint Report (here) and are multiple times the size of Scopes 1 & 2. As part of the development of the next Sustainability Strategy, the University will undertake a new carbon footprint report and engage on a shared understanding and targets for Net Zero.

1.4. Progress to date

The University has been working to increase energy efficiency and reduce GHG emissions for many years and has been very successful. Since 2006, the University has developed an expert Energy Team in Buildings & Estates (see next section) and has achieved a 50% reduction in primary energy to 2022. In 2016, the Community & University Sustainability Partnership was established to develop and implement a broad and ambitious sustainability strategy.

The University of Galway have undertaken numerous projects to reduce the energy and carbon footprint, funding for these projects has come jointly from the university finances, savings in energy schemes and funding from SEAI and HEA. The following list highlight some of the main achievements but is not exhaustive.

- University of Galway Energy Team award SEAI Energy team 2019.
- Shortlisted for SEAI Awards four years in a row.
- Partnership agreements with CLÁR ÉIFEACHTACHT FUINNIMH.
- ISO 50001:2018 Monitoring and Reporting accredited in 2021, 12 years of certification to the ISO50001 standard.
- Enthusiastic Energy team conducting individual energy projects.
- 500kw SOLAR PV Installed on campus rooftops, a further 500kw scoped.
- 20 EV Car Charging Points around campus.
- 6500 LED lights installed throughout campus buildings.
- 1MW Wood Pellet Boilers serving Alice Perry and The Quadrangle.
- 19000 student energy engineers' potential.
- Improved control strategies across older building stock, replacement of equipment that was no longer energy efficient, boilers, pumps, air handling units, fume cupboard fans, light fittings and electric motors.
- Collaboration with researchers and students on projects installed.
- Refurbishment of No 9 Distillery Road as exemplar building from G to A2 rating
- Innovation Energy Research funded by SEAI/H2020 allows innovative technologies/ systems developed by researchers integrate into the campus fabric and systems with collaboration between teams. Examples of these are Geofit Thermal Heat Pump, HITTHEGAP, DE-RISK Project, Wave and Wind research. http://www.nuigalway.ie/sustainability.
- 12 Days of Energy Christmas campaign, seasonal tips and advice at holidays to Switch Off and Save, Awareness campaigns are run regularly with the Student Unions, through `One Good Ideas', Battle of the Dorms, Student Fairs.
- The CUSP group are the university sustainability team, and they interact with a number of bodies around Galway, ie Galway City and County Council, HSE and GMIT as examples. We are currently involved in preparing the GCC Decarbonisation plan.
- Purchase of Electric Vehicles for Library and Post room, further vehicles purchase to come in the next few years.
- Green Flag Campus (2019) and Green Park Flag (2020) by An Taisce, recertified 2022.
- In 2023, University of Galway was ranked 23rd in the *Times Higher Education* Impact Rankings for SDG 7: Affordable and Clean Energy. We have shown our capability that through our actions, awareness and hard work we can exceed the targets set.

2. Our People – Leadership and governance

2.1. Senior management commitment

Sustainability is a core value of the University of Galway Strategy 2020-2025 and the University Management Team (UMT) adopted a Climate Action and Sustainability Policy in 2021. This Policy sets out the roles of senior management:

- President - As the Head and Chief Officer of the University, provides leadership, commitment and support for the University's Climate Action and Sustainability Policy.
- Office of the Deputy President & Registrar - The Deputy President is the UMT Leader with responsibility for the sustainability function of the University and oversees compliance with this Policy.
- Office of the Chief Operating Officer - The Chief Operating Officer is the UMT Leader with responsibility for achieving carbon neutrality and net zero emissions.
- University Management Team - Play a lead role in supporting the integration of climate action and sustainability into daily activities and all levels of the University and ensure leadership and implementation of climate and sustainability goals set out in this policy.

The President annually signs the energy and carbon policy which is a requirement of the ISO 50001:2018 plan. The Deputy President & Registrar is the University's Climate and Sustainability Champion (see next section). Senior management has undertaken sustainability training (see below) and representatives frequently participate in University sustainability events.

2.2. Climate and sustainability champion

According to SEAI (2024): "The two primary functions of the Climate and Sustainability Champion are: to implement and report on the Public Sector Climate Action Mandate; and to function as a sponsor as management board level for the organisation's Green Team."

The Deputy President & Registrar, Prof. Peter McHugh is the University's Climate and Sustainability Champion. Prof. McHugh is a member of the UMT, which is collectively responsible for the effective day-to-day management of the University. Prof. McHugh also chairs the University Sustainability Advisory Board and is the line manager for the Director of Sustainability.

2.3. Governance structure

Further to the role of senior management described above, the governance of sustainability at the University is described in Sustainability Terms of Reference (May 2022), including the roles and composition of the Sustainability Office, University Sustainability Advisory Board, CUSP General Board and CUSP Executive Board, and reporting to UMT and Údarás na hOllscoile Standing & Strategic Planning Committee (STR). These are summarised in Figure 1 and Figure 2.

Led by the Director of Sustainability, the purpose of the Sustainability Office is to lead and promote sustainability in all aspects of University learning and research, culture, operations and governance structures, and to empower its diverse communities of staff, students and partners to co-create tomorrow's sustainable campus and deliver the Sustainable Development

Goals. The Sustainability Office works in close collaboration with other academic and professional services units, including Colleges, Buildings & Estates and the Centre for Excellence in Learning & Teaching.

Údaras na hOllscoile Standing & Strategic Planning Committee	• Committee of the Governing Authority • Oversees implementation of Sustainability Strategy
University Management Team	• Chaired by President • Leadership on Climate Action & Sustainability Policy
University Sustainability Advisory Board	• Chaired by Deputy President & Registrar • Comprises senior University and external reps • Reports to University Management Team bi-annually
CUSP General Board & Executive Board	• Chaired by Director of Sustainability • Comprises WG chairs, reps of students, staff, community • Reports to University Sustainability Advisory Board

Figure 1. Reporting structure

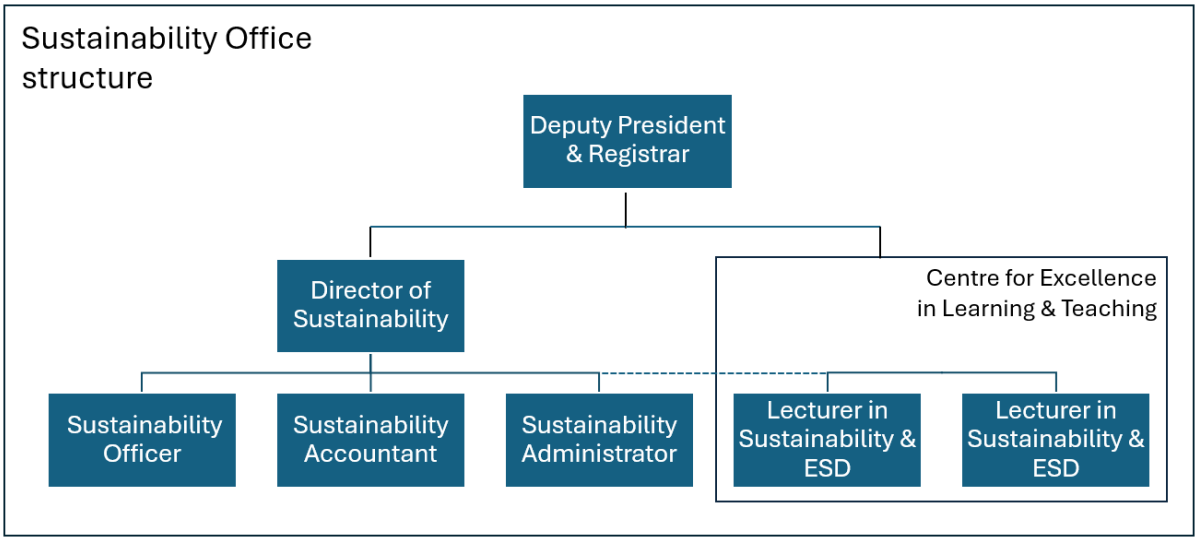

Figure 2. Sustainability Office structure

2.4. Green team

According to SEAI (2024): "The Green Team has two main objectives: To influence decision making so that climate and environmental criteria are to the fore; To influence colleagues to commit to working and living sustainably". The University's Green Team comprises the Sustainability Office, Energy Team and other units as part of the Community University Sustainability Partnership (CUSP). Based on the Learn-Live-Lead framework, CUSP is structured around six work areas as shown in Figure 3.

Figure 3. Thematic areas from Sustainability Strategy

CUSP is a multi-disciplinary team of over 30 students and staff from across the University of Galway and community partners – all working together to showcase how a university can become a role model for the transition to a sustainable future.

The Sustainability Office (Figure 2) comprises a Director of Sustainability (Dr Richard Manton), Community & University Sustainability Officer (Michelle O'Dowd Lohan), Sustainability Accountant, Administrative Assistant and works closely with two Lecturers in Education for Sustainable Development. The Sustainability Office is led by the Director of Sustainability, who reports to the Deputy President & Registrar.

The Energy Team includes the Director of Estates Operations, the Head of Building Services, Energy & Utilities, the Environmental, Health & Safety Manager, the Building Services Engineer, the Mechanical Supervisor, the Electrical Supervisor, a Senior Energy Consultant (external) and a Senior Building Energy Management Engineer (external). Michael Curran (Head of Building Services, Utilities & Energy) is the Energy Performance Officer and Lorraine Rushe is the ISO50001 standard and Energy Manager.

Our Green Team has the correct balance of human resources with educational, financial, technical, and specialised skillsets and we will continually review the make-up of our team as needs change or arise.

3. Our People – Engaging our staff

3.1. Student education and staff training

The University has incorporated sustainability and climate action into both student education and staff training. The University currently offers more than 300 sustainability modules with offering available in every school in the University. Several projects are underway to map the curriculum to the Sustainable Development Goals.

One noteworthy module is 'Introduction to Sustainability', future oriented and explores the concept of sustainability in the face of global change. It encompasses a wide range of theory and practice, including social, economic and environmental issues, and links international examples to local context and relevance. The module introduces students to the concept of sustainability and a broad range of relevant topics relating to all aspects of sustainability, including environmental, social and economic sustainability, and how these relate to each other. It utilises the expertise of staff from across the university who teach on this module and introduce students to relevant topics and research.

The University has also recruited two Lecturers in Education for Sustainable Development to work with academic and professional support colleagues to ensure that the SDGs, sustainability, the climate emergency, and related environmental issues are embedded across all of our degree programmes, undergraduate and postgraduate, and that our staff (academic and professional support) are provided with professional development in these topics as well as in aspects of appropriate pedagogical approaches.

The greening of laboratories has been a particular focus for the University. A training programme has been developed entitled 'Green Labs: Principles and Practices' and is available to lab-based staff and students. It covers key environmental concepts such as climate change, plastic pollution, sustainability, and biodiversity. In addition, the lifecyle of materials, and the environmental impact of the resources and equipment typically used in scientific laboratories are be examined in some detail. These ideas form the backdrop to a focused study on how the organisation of, and practices in, scientific laboratories can be reformed to reduce their environmental footprint and be established on a more sustainable basis.

Finally, all staff must undergo induction training, including sustainability (nature & ecosystems, energy & GHG emissions, built environment, health & wellbeing) and sustainable public procurement. Other relevant staff training includes unconscious bias training and equality, diversity and inclusion training.

3.2. Climate action and sustainability workshops

The University has conducted workshops to engage on climate issues and energy awareness measures that focus on decreasing our carbon footprint. We carry these out bi-annually during energy awareness open days. During these events we invite suppliers of energy efficient equipment, renewable energy systems and experts in the field of energy and carbon measurement and management to share their technologies and techniques to enable staff,

students and the wider public to educate themselves on climate actions they can take to reduce their environmental impacts.

We also enable the technical officers of each of our buildings to review energy and carbon emissions associated with their buildings so that they can manage and improve each of their building's energy & carbon performances.

We are members of An Taisce – The National Trust for Ireland who are active in the areas of environmental and built heritage in Ireland and our partnership with An Taisce enables our university to avail of environmental & sustainability support schemes such as the Green Flag initiatives. We have gained 'green flag' status in the areas of energy, water and biodiversity which demonstrates our ongoing work in managing and promoting sustainability and climate action related aspects.

We are also partner with the SEAI- Sustainable Energy Authority of Ireland under their Public Sector Partnership Programme and use the SEAI resources and in particular the Energy Academy, Engaging People at Work Accelerator and Energy Basics & Carbon Basics Training Programmes to bolster the skillsets of our staff.

Staff and students are encouraged regularly through awareness campaigns to Switch Off during bank holiday weekends, extended holiday breaks and through social media campaigns. Students and staff have taken part in #ReduceYourUse campaigns led by SEAI and OPW, awareness campaigns and staff events outlined how we can save energy at work and home.

As we approach the end of our current University Strategy and Sustainability Strategy, we have organised engagement sessions on sustainability and other topics as part of the '2030 Think-in' series. A dedicated sustainability session on 6 June 2024 engaged students and staff on our progress under our current sustainability strategy (under each of the Learn-Live-Lead sections) and suggestions for the next strategy. The feedback from this session is currently being collated.

3.3. Senior leadership training

Climate Action Training was held for the University Management Team on 15th June 2023, attended by 11 out of 16 UMT members. Further training for senior management will be organised in the near future.

4. Our targets

The two headline targets set by the Climate Action Mandate are:

- Reduce energy related GHG emissions by 51% in 2030.
- Improve energy efficiency by 50% by 2030.

The University has made significant progress in both targets to 2022; data and insights provided below. The University has also committed to more ambitious targets (see Section 7).

It should be noted that the relevant data are reported to the SEAI on a calendar year basis using the Public Sector Monitoring & Reporting (M&R) System. Data for 2023 have been uploaded to the M&R system, however, the approved data will not be available from SEAI until after June 2024 (the deadline for this Roadmap). Therefore, 2022 data are reported in this Roadmap, which will be updated in due course.

4.1. Greenhouse gas emissions

Greenhouse gas emissions are measured in carbon dioxide equivalent (CO_2e) emissions. The University has been monitoring GHG emissions since 2006, which were then valued at 15,625.3 tCO_2 (see Figure 4). In 2022, GHG emissions were 7,275.5 tCO_2. This is a 46.6% reduction between 2006 and 2022. For the purposes of the Climate Action Mandate, the baseline value is set at the average of 2016-2018 emissions which is 11,222.5 tCO_2 for the University. The 2022 figure represents a 35% reduction on the baseline. This demonstrates the significant progress made to the target with major emissions reductions achieved since 2014.

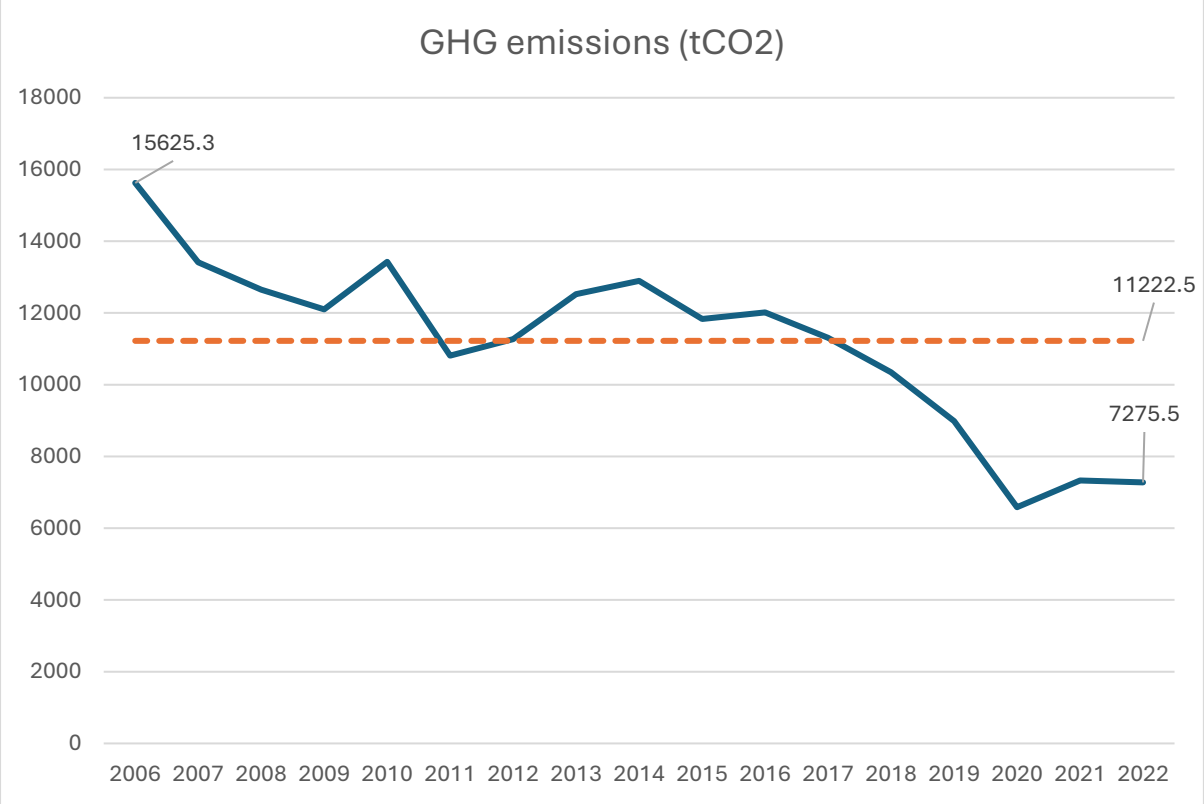

Figure 4. GHG emissions 2006-2022 and baseline (2016-2018 average)

In 2022, electricity represented 5,008.7 tCO_2 or 68.8% of GHG emissions. Meanwhile, thermal (mostly gas) accounted for 2,225.8 tCO_2 or 30.6%. Transport, at 41 tCO_2, contributes 0.6% of the University's overall GHG emissions. In 2022, GHG emissions were 75 tCO_2 lower (1% lower) than in 2021. Figure 5 shows the GHG emissions dashboard as reported on the SEAI M&R system.

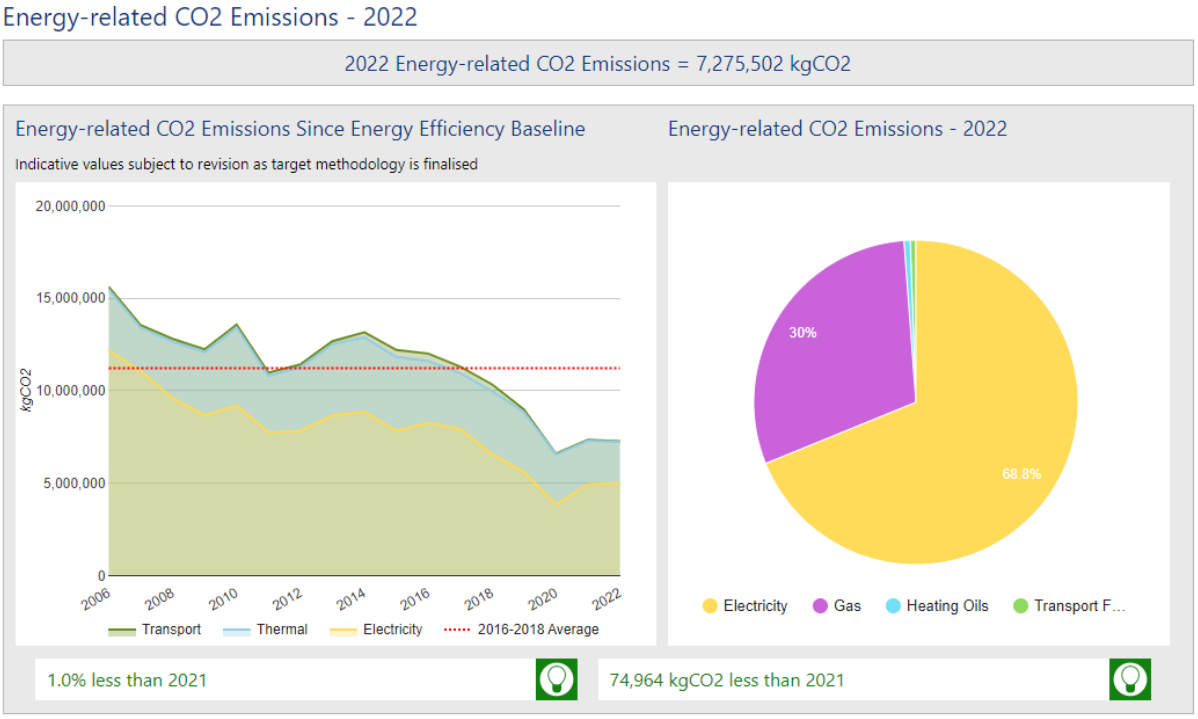

Figure 5. GHG emissions dashboard as reported on SEAI M&R System

4.2. Energy efficiency

In 2022, the University consumed 42.3 GWh of energy (68.5% electricity, 29.5% gas, 2% other), see Figure 6. However, the Climate Action Mandate target is not based on an absolute energy consumption reduction, but rather it is an activity-adjusted target to account for the area of the campus, i.e. a measure of energy efficiency.

The Energy Performance Indicator (EnPI) is calculated by dividing energy consumption (in kWh) by treated floor area (in square-metres). The 2006 baseline EnPI is 463 kWh/m^2. The target EnPI is 196 kWh/m^2. In 2022, the EnPI was 198 kWh/m^2 (Figure 7). This is 49.6% better than the baseline with just an 0.8% improvement required by 2030.

In 2022, energy consumption and GHG emissions were higher than in 2020. This reflects the return to full campus activity following the COVID-19 pandemic.

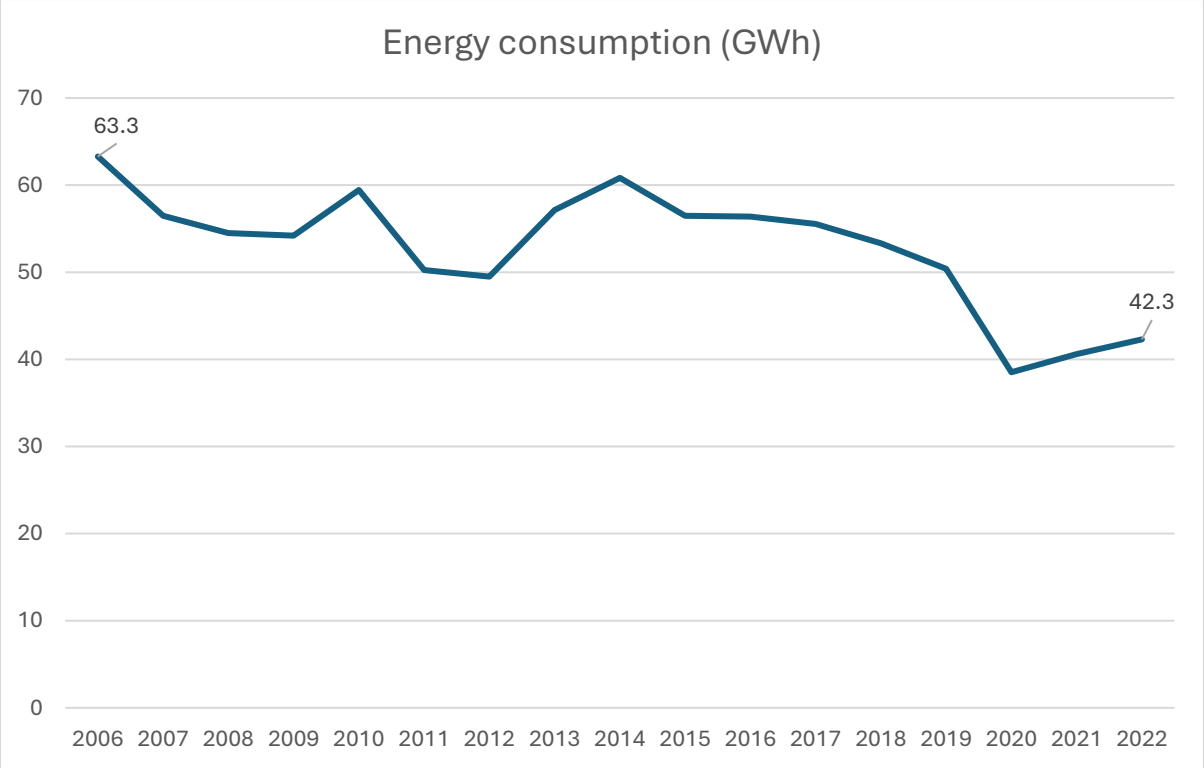

Figure 6. Energy consumption 2006-2022

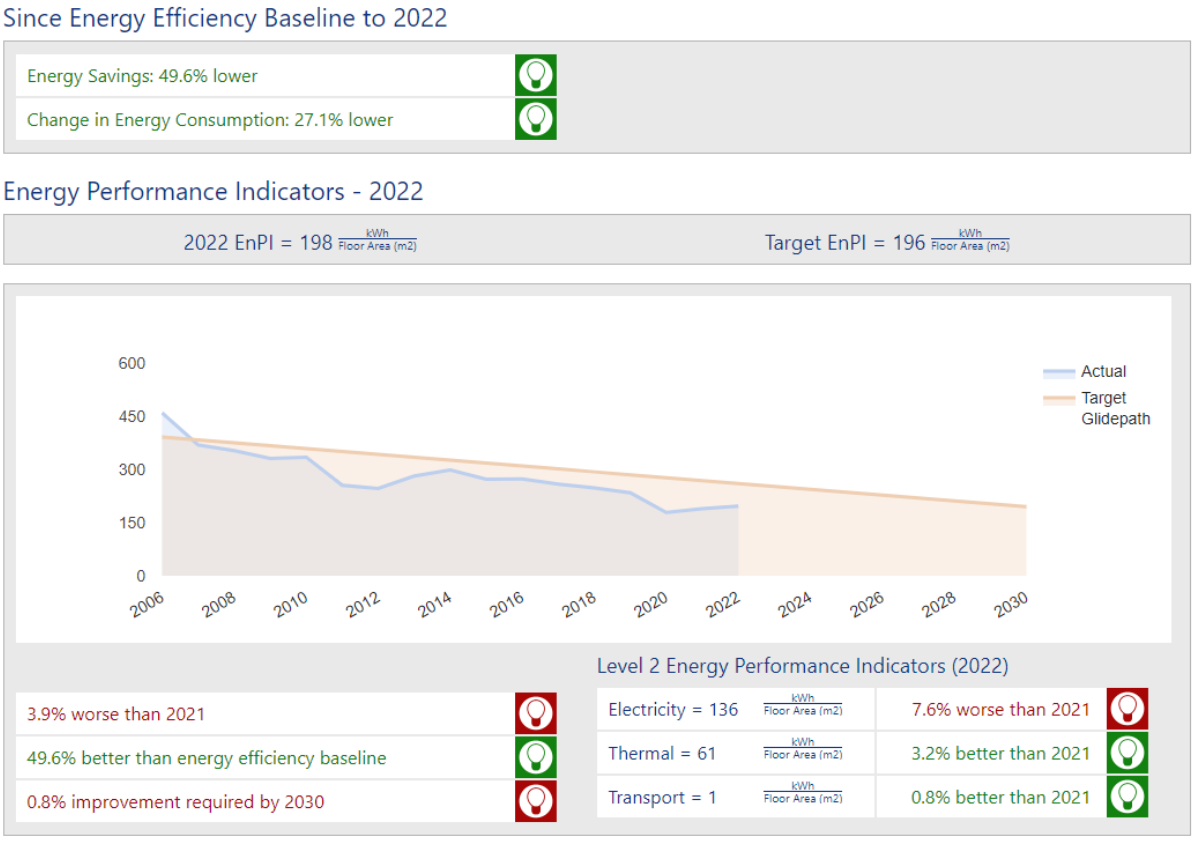

Figure 7. Energy efficiency dashboard as reported on SEAI M&R System

4.3. Analysis

The University is on the cusp of achieving the energy efficiency target and has made major progress towards the GHG emissions target. We are very proud of these achievements and we are on a trajectory to surpass the 2030 targets. This is all the more impressive as we expand our campus and grow our community (since 2006, treated floor area has increased by 56% and student numbers have increased by 30%).

The Energy Team has been pivotal in managing energy and GHG emissions for the past 15 years. Students, researchers and other staff have ensured that their energy behaviour has supported our targets. One noteworthy accomplishment is continued certification to ISO50001: 2018 Energy Management System, which we use to continuously improve our energy and carbon performance. Energy usage at each of our significant energy using buildings is monitored using our bespoke building energy management system software.

We have successfully completed several projects to as exemplar and Pathfinder projects to understand the implications and standards necessary. This has included the SEAI/HEA Pathfinders project Áras De Brún 2021: new air-to-water 200kW heat pump, LED lighting upgrade, 35kW PV Panels completed on the roof, radiators and a new Building Management system installed.

Other notable projects are: installation of new fabric roof upgrade to Áras na MacLéinn with installation of 150kw Solar PV installation and new Building Management Control System, and participation in the GEOFIT project in the Alice Perry Building with the installation of 18 No. 150m boreholes, district heating pipework, 2 No. new 50 kW heat pumps to link to the Kingfisher swimming pool providing a secondary heat source.

4.4. Actions/projects required to meet targets

Our strategy is to incorporate the principle of energy efficiency first, the use of renewable energy technologies and heat pump systems, when replacing gas and oil boiler systems. We will not use any new fossil fuel heating systems after 2023. Our design brief for all new and retrofit projects/ buildings will be to achieve nearly zero-energy building (nZEB) standard. We will use best available technologies not entailing excessive costs (BATNECC) and will incorporate life cycle cost analysis exercises in all capital projects.

We are cognisant of the scale of the challenge (to achieve our targets) and the cost barriers associated with designing, building, installing and commissioning energy efficient & renewable energy projects/ buildings. Our approach will be to position applications for funding as valuable propositions (from cost and environmental perspectives). It is essential that the University has a pipeline of projects ready for potential funding support (e.g. Pathfinder projects).

We have mapped our plan to close the gap in achieving our 2030 GHG emissions target and have populated our Gap to Target with projects that will enable us to reach and surpass these targets. Based on the Gap to Target tool, Figure 8 shows the pathway to the Climate Action Mandate GHG emissions reduction targets and Figure 9 shows the modelled decarbonisation scenario to 2030.

It should be noted that these charts have not yet been updated from our previous Climate Action Roadmap as the Gap to Target tool is not yet available for 2023 data. When we update our model, we will also account for in-progress building projects (e.g. new Library & Learning Commons, Water Sports Centre) and retrofit projects.

The University of Galway has developed a Register of Opportunities as part of ISO50001:2018 (see Figure 10). These projects will be developed and costed to achieve the targets set in the plan. Potential future schemes and projects will be evaluated to ascertain value for money against carbon reduction.

Potential large carbon reduction programmes:

- Energy performance contracting scheme.
- Financing large-scale deep retrofit of the current Building stock.
- Sustainable heating options, e.g., district heating, heat pumps, wood pellet and phase technology schemes.
- Large-scale rooftop PV and Battery Storage.
- High-energy-efficient data centres.
- Energy optimised applied research facilities.
- NZEB and/or energy-positive residences.
- Sustainable campus and transport development.
- Piloting of innovative energy technologies and approaches, incorporating third-level research capabilities where appropriate.
- Investigating the installation of PV Farm on Campus Generating 50% Electrical load of the complete campus.
- Deploying Renewable Hydrogen Solutions in transport and heating.
- Wind Generation in remote campuses, Vertical turbine blade systems.
- Green Lab implication and Lab of Future Design.

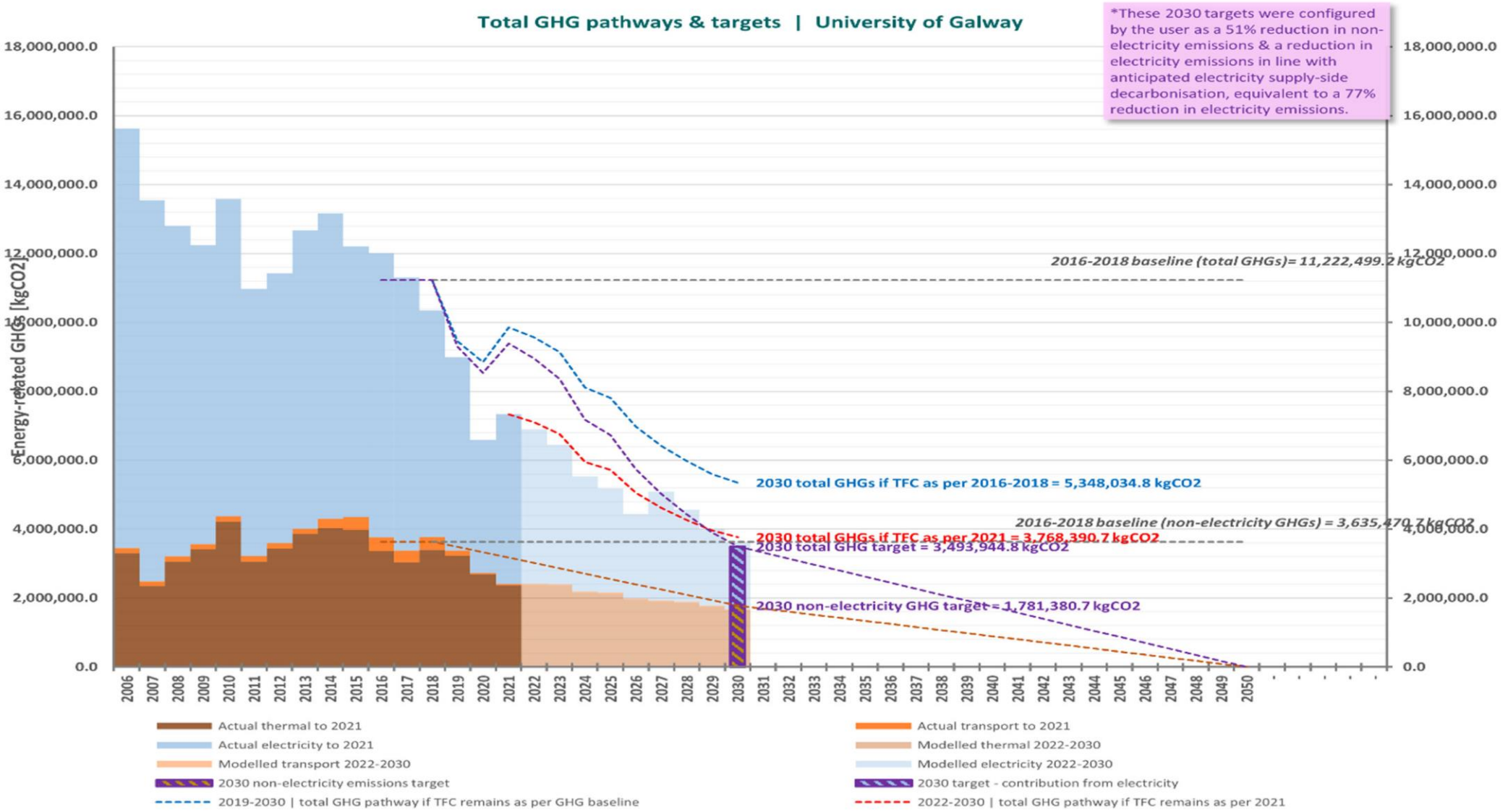

Figure 8. Pathway to GHG emissions reduction targets

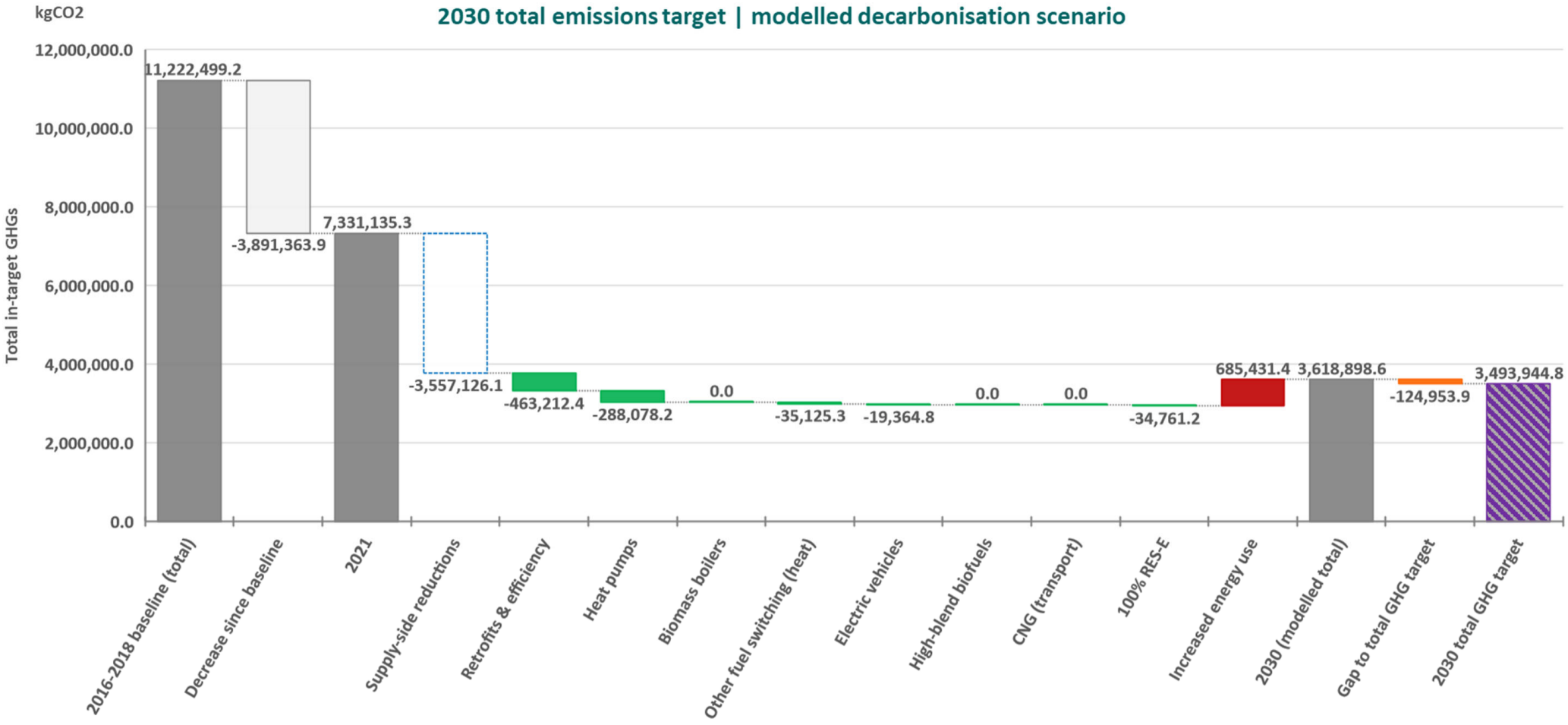

Figure 9. Modelled decarbonisation scenario to 2030

Energy efficiency | new projects

Define your organisation's readiness to implement additional projects	
Organisational readiness:	3 Reasonable capacity

Select a project from M&R list using dropdown below or choose 'Enter project details >>' below to define a new project in columns F-T	Project details		Project categorisation					Energy savings in year after implementation [see note for explanation how to enter RE & CHP savings]				Financial summary			Project included in scenario			Notes (optional)
	Project name	Location	Type	Sub-type	Project scale	Project readiness	EE or RE or CHP?	Grid electricity	Thermal	Transport	Total	Estimated cost	Project will seek to avail of external funding or support	Project will seek to incorporate pay for performance	1	2	3	
	[-]	[-]	[-]	[-]	[-]	[-]	[-]	[kWh TFC]	[kWh TFC]	[kWh TFC]	[kWh TFC]	[€]	[-]	[-]	[-]	[-]	[-]	[-]
Achieve ISO 50001 status | Unknown	Achieve ISO 50001 status	Campus Wide	Energy Management	EM Certification (ISO 50001, IS 393, EN 16001)	1 Zero- or minimal-investment	6 Tender / contracting stage	EE	506,378.000	452,395.000	1,643.000	960,416.000	€ 12,500	Other (non-SEAI)	No	No	No	No	
Buildings identified through internal energy audits | Unknown	Buildings identified through internal energy audits	Each of the top 15 Significant Energy Using Buildings	Energy management	Formal monitoring & targeting system	1 Zero- or minimal-investment	6 Tender / contracting stage	EE	337,585.000	301,596.400	1,038.000	640,219.400	€ 16,500	Other (non-SEAI)	No	Yes	No	No	
Enter project details >>	DERI (Digital Enterprise Research Institute) Building - Boiler Upgrade	NUI Galway campus	HVAC	Boiler upgrade	3 Standalone energy project (>€100k)	3 Project scope developed	EE	-15,000.000	160,000.000	0.000	145,000.000	€ 300,000	SEAI	No	Yes	No	No	Will require replacement of radiator systems
Enter project details >>	DERI Building - PV Installation (50 kW P e)	NUI Galway campus	Energy supply	Onsite renewable electricity generation - solar PV	3 Standalone energy project (>€100k)	3 Project scope developed	RE	45,000.000	0.000	0.000	0.000	€ 120,000	None	No	Yes	No	No	50 kWp
	DERI Building - Lighting Upgrade- LEDs & Presence & Daylight Controls	NUI Galway campus	Lighting	Lighting & lighting controls (indoors)	3 Standalone energy project (>€100k)	3 Project scope developed	EE	100,000.000	0.000	0.000	100,000.000	€ 75,000	None	No	Yes	No	No	NEW led lighting and sensors
	Bio-Science building; Lighting Upgrade- LEDs & Presence & Daylight Controls	NUI Galway campus	Lighting	Lighting & lighting controls (indoors)	3 Standalone energy project (>€100k)	2 Priority project	EE	150,000.000	0.000	0.000	150,000.000	€ 120,000	SEAI	No	Yes	No	No	Replace out existing lighting for new LED
	Arts Science - PV	NUI Galway campus	Energy supply	Onsite renewable electricity generation - solar PV	3 Standalone energy project (>€100k)	6 Tender / contracting stage	RE	125,000.000	0.000	0.000	0.000	€ 180,000	SEAI	No	No	No	No	Install 150 kWp of PV on Arts Science roof
	Cairnes Building	NUI Galway campus	Energy supply	Onsite renewable electricity generation - solar PV	3 Standalone energy project (>€100k)	3 Project scope developed	RE	45,000.000	0.000	0.000	0.000	€ 120,000	SEAI	No	No	No	No	Install 50 kWp Solar PV Panels
	Moyola Building	NUI Galway campus	Energy supply	Onsite renewable electricity generation - solar PV	3 Standalone energy project (>€100k)	3 Project scope developed	RE	38,000.000	0.000	0.000	0.000	€ 110,000	SEAI	No	No	No	No	Install 35kw Solar PV Panels
	Aras De Brun Building	NUI Galway campus	Energy supply	Onsite renewable electricity generation - solar PV	2 Standalone energy project (<€100k)	6 Tender / contracting stage	RE	0.000	0.000	0.000	0.000	€ 80,000	SEAI	No	No	No	No	Install 33 kWp Solar PV Panels
	Geography builing	NUI Galway campus	Energy supply	Onsite renewable electricity generation - solar PV	3 Standalone energy project (>€100k)	4 Business case developed	RE	0.000	0.000	0.000	0.000	€ 210,000	SEAI	No	No	No	No	Install 200 kWp Solar PV Panels
	Kingfisher building	NUI Galway campus	Energy supply	Onsite renewable electricity generation - solar PV	3 Standalone energy project (>€100k)	4 Business case developed	RE	0.000	0.000	0.000	0.000	€ 250,000	Other (non-SEAI)	No	No	No	No	Install 300 kWp PV Panels
	PV Field at Dangan	NUI Galway campus	Energy supply	Onsite renewable electricity generation - solar PV	3 Standalone energy project (>€100k)	4 Business case developed	RE	816,000.000	0.000	0.000	0.000	€ 1,000,000	Other (non-SEAI)	Yes - energy performance contract (EPC)	No	No	No	Install 1000 kWp PV Panels on ground of Dangan
	Lighting projects various; Lighting Upgrades- LEDs & Presence & Daylight Controls	NUI Galway campus	Lighting	Lighting & lighting controls (indoors)	3 Standalone energy project (>€100k)	3 Project scope developed	EE	100,000.000	0.000	0.000	100,000.000	€ 200,000	SEAI	No	No	No	No	Upgrade 1000 light fittings to LED
	Anatomy boilerhouse	NUI Galway campus	Energy supply	Heat pump	2 Standalone energy project (<€100k)	2 Priority project	EE	0.000	28,000.000	0.000	28,000.000	€ 95,000	None	No	No	No	No	Replace existing oil fired boiler
	Aras Na Mdeinn	NUI Galway campus	Energy supply	Heat pump	3 Standalone energy project (>€100k)	3 Project scope developed	EE	0.000	602,784.000	0.000	602,784.000	€ 175,000	SEAI	No	No	No	No	Replace gas fired boilers
	Arts Millenium	NUI Galway campus	Energy supply	Solar thermal	2 Standalone energy project (<€100k)	5 Design stage	EE	0.000	6,000.000	0.000	6,000.000	€ 35,000	Other (non-SEAI)	No	No	No	No	Installation of Solar Water heaters
	MRI Annex	NUI Galway campus	Energy supply	Heat pump	3 Standalone energy project (>€100k)	3 Project scope developed	EE	-35,000.000	160,000.000	0.000	125,000.000	€ 110,000	SEAI	No	No	No	No	Installation of new Heat Pump to replace oil fired boiler
	Alice Perry Building - Variable Speed Drives on HVAC System	NUI Galway campus	HVAC	VSD	3 Standalone energy project (>€100k)	3 Project scope developed	EE	190,000.000	0.000	0.000	190,000.000	€ 110,000	SEAI	No	No	No	No	Replacement of pump sets and distribution new VSD speed drives
	Biomedical science	NUI Galway campus	Energy supply	CHP	3 Standalone energy project (>€100k)	5 Design stage	CHP	686,000.000	-350,000.000	0.000	336,000.000	€ 300,000	None	No	No	No	No	install new Gas fired CHP, 150 kWp
	Human Biology Building	NUI Galway campus	Energy supply	CHP	3 Standalone energy project (>€100k)	5 Design stage	CHP	686,000.000	-350,000.000	0.000	336,000.000	€ 300,000	None	No	No	No	No	install new gas fired CHP 150 kWp
	North Campus District	NUI Galway campus	Energy supply	District heating	3 Standalone energy project (>€100k)	1 Concept	EE	0.000	2,500,000.000	0.000	2,500,000.000	€ 1,500,000	Other (non-SEAI)	No	No	No	No	Installation of new North Campus district heating scheme
	South Campus District	NUI Galway campus	Energy supply	District heating	3 Standalone energy project (>€100k)	1 Concept	EE	0.000	2,500,000.000	0.000	2,500,000.000	€ 2,000,000	Other (non-SEAI)	No	No	No	No	Installation of new North Campus district heating scheme
	no 10 distillery road	NUI Galway campus	Building fabric	Combination/other	2 Standalone energy project (<€100k)	3 Project scope developed	EE	0.000	35,000.000	0.000	35,000.000	€ 70,000	SEAI	No	No	No	No	External insulation and roof insulation, new windows.
	no 19 distillery road	NUI Galway campus	Building fabric	Combination/other	2 Standalone energy project (<€100k)	3 Project scope developed	EE	0.000	35,000.000	0.000	35,000.000	€ 70,000	SEAI	No	No	No	No	External insulation and roof insulation, new windows.
	Gate lodge	NUI Galway campus	Building fabric	Combination/other	2 Standalone energy project (<€100k)	3 Project scope developed	EE	0.000	22,000.000	0.000	22,000.000	€ 50,000	SEAI	No	No	No	No	External insulation and roof insulation, new windows.
	Security building	NUI Galway campus	Building fabric	Combination/other	2 Standalone energy project (<€100k)	3 Project scope developed	EE	0.000	28,000.000	0.000	28,000.000	€ 62,000	SEAI	No	No	No	No	External insulation and roof insulation, new windows.
	Arts Science Mircobiology	NUI Galway campus	Building fabric	Windows	3 Standalone energy project (>€100k)	3 Project scope developed	EE	0.000	75,000.000	0.000	75,000.000	€ 120,000	SEAI	No	No	No	No	Replace existing single glazed windows new triple glazed sections
	arts science Chemistry	NUI Galway campus	Building fabric	Windows	3 Standalone energy project (>€100k)	3 Project scope developed	EE	0.000	100,000.000	0.000	100,000.000	€ 190,000	SEAI	No	No	No	No	Replace existing single glazed windows new triple glazed sections
	Arts Millenium	NUI Galway campus	HVAC	BEMS	2 Standalone energy project (<€100k)	5 Design stage	EE	0.000	260,000.000	0.000	260,000.000	€ 100,000	SEAI	No	No	No	No	upgrade cylon controllers
	Library building	NUI Galway campus	HVAC	BEMS	2 Standalone energy project (<€100k)	5 Design stage	EE	0.000	200,000.000	0.000	200,000.000	€ 82,000	SEAI	No	No	No	No	upgrade cylon controllers
								0.000	0.000	0.000	0.000							

Figure 10. Register of Opportunities from ISO50001:2018 project listed developed by the EPO

5. Our Way of Working

5.1. Energy and environmental management systems

The University achieved ISO 50001 certification in 2011 and achieved re-certification to ISO 50001:2018 Monitoring and Reporting accredited in 2021. This is an international energy management standard aligned to SDGs and recognises our efforts to use energy more efficiently and to achieve continuous improvement in energy performance. The President annually signs the energy and carbon policy which is a requirement of the ISO 50001:2018 plan.

The Energy team, led by the Energy Performance Officer, leads the University in its quest for continuous improvement in its energy footprint and efficiency, and compliance with external regulations and standards for:

- Ensuring the EnMS is established, implemented, maintained and undergoes continuous improvement in compliance with the standard.
- Allocating responsibility for energy management activities to the Energy & Utilities Manager.
- Reporting back to the University Management Team (UMT) meetings on energy performance and adherence to the EnMS.
- Ensuring that the energy measures are in line with the University's Energy Policy, promoting the awareness of the Energy Policy and objectives throughout the University and ensuring that the operation of the EnMS is appropriate and effective.
- Ensuring the energy management approach supports the University's Energy Policy,
- Engaging with external funding bodies SEAI and HEA to carry out energy projects as part of Pathways.
- Set targets and actions from the Register of Opportunities.
- Members of the U9 group of University Energy engineers.
- Actively promote energy reduction and run energy campaigns to encourage students to reduce energy consumption.

5.2. Digitisation of processes

The University's Sustainable Public Procurement Handbook refers to the Irish GPP Criteria for Paper and Printing Services and requires the following to be included in tender documents: Legal harvest of timber for pulp production; Sustainable sourcing of fibres for pulp production; Waste (for converted or printed paper products); and Recyclability (for converted or printed paper products). Criteria are also included in the Handbook for the impact of printing (paper, chemicals, inks, energy, water, waste) and event/conference paper products (deforestation, air, water and soil pollution, energy and chemical use in processing, printing, waste).

The University has strived to digitalise services and reduce printing and paper use through a variety of measures, including procurement and behaviour change. The University's Waste Reduction, Reuse & Recycling Guidelines include sections on mixed recycling and the Binless Office Policy (students and staff must bring any waste to the nearest recycling station located in communal areas). A paper recycling tray is provided on each desk in teaching venues and

offices. The University monitors the procurement of paper products and services. Between 2023 and 2022, paper consumption reduced by 3% from 1,257 reams to 1,223 reams.

The Student Digital Pathways programme is transforming University processes and IT with the implementation of a new student records management solution. The programme has a core aim to review and improve the organisation, processes, underlying technology and data used to manage the students' journey at University of Galway – from recruitment to graduation. Staff and students will have access to a single platform, the SRMS, for all student services and data. The solution will be available across multiple platforms, mobile and desktop, for accessibility. This is a large and complex programme and one of the many benefits will be the digitalisation of previously manual processes.

5.3. Green procurement

As part of the University's commitment to developing its organisational resilience, and to mitigating the loss of goods and services that support its critical academic, research, and support functions, it will incorporate measures into its procurement processes and procedures to evaluate the effectiveness of its critical suppliers' business continuity arrangements.

The University of Galway Procurement Policy 2023 pledges to 'incorporate the use of Green Procurement practices in our processes and procedures, in an effort to reduce our environmental impact in conjunction with CUSP'. Clause 15 of the University of Galway's Procurement Policy relates to sustainability. The University is committed to working with the relevant Government agencies to develop green procurement criteria that will be used where relevant when tendering for goods, services and works.

In incorporating sustainable and social considerations into tenders, Units seek to ensure that:

- the sustainable and social consideration does not result in discrimination,
- sustainable and social considerations are linked to the subject matter of the contract,
- value for money is maintained to ensure sustainable delivery of services,
- the objective of the sustainable and social consideration is proportionate to the contract,
- the targeted benefit is capable of being measured and monitored during the execution of the contract (the necessary staffing, arrangements and resources should be allocated to this task having regard to the principle of proportionality), and
- the clauses do not negatively impact on the SME sector

The University of Galway Sustainable Public Procurement Handbook provides guidance on ways to reduce environmental impact, promote economic development, and support social responsibility when purchasing goods and services. The Handbook is based on legal/regulatory requirements and the EPA's GPP criteria and guidance. Currently, 85% of contracts/tenders incorporate green purchasing criteria and we have a target of 100% by 2025.

5.4. Low carbon construction methods

All new buildings refurbishments are designed and built to sustainable standards. The University's Waste Reduction, Reuse & Recycling Guidelines include the need to consider end of life disposal costs and environmental impact when making procurement decisions including the construction of new or refurbished buildings.

The two most recently completed developments on the University campus are student accommodation developments: Goldcrest and Dunlin. Goldcrest is a 426-bed student residence in North Campus. The development has a DEC cert of A3. The development is equipped with a centralised energy centre and Building Energy Management System (BEMS); energy-efficient LED lighting is installed throughout the development. Natural ventilation is used and there is a high level of insulation and air tightness (2.9m^3/m^2/hr@50Pa).

Dunlin is a 674-bed student residence, also in North Campus. Engineers JV Tierney describe the environmental credentials as follows: "The development is NZEB compliant and BER A3 rated, with sustainable and energy-efficient design features such as LED lighting, Photovoltaics, A & A+ Green Materials, Air Source Heat Pumps, an advanced Continuous Mechanical Extract Ventilation (CMEV) system to improve occupant comfort and air quality, a Building Energy Management System (BEMS), and high levels of airtightness and insulation. The development is also BREEAM design stage certified with a 'Very Good' rating."

5.5. Resource use

Food Waste

Our Building and Estates team in conjunction with a student undertaking the Masters degree programme in Environmental Leadership, is leading a community engagement initiative on a new organic waste circular economy process. Organic waste, composed of food waste arising from catering services and green waste arising from plant trimmings and grass cuttings, is segregated. The waste is sent to Barna Recycling where it enters a controlled industrial scale composting process. The resultant compost is returned to the University, where it is used as a fertiliser on the campus grounds.

The University of Galway Student Pantry is a student led initiative where leftover food is collected from supermarkets and re-distributed to students. The food is sourced through FoodCloud, a system creating links with local supermarkets to redistribute food and reduce food wastage. The collections consist of surplus food, food with damaged packaging, end of line items and food that is nearing its best before date. As well as a valuable food waste reduction initiative, the food has proven invaluable to many University of Galway students struggling to make ends meet. Upon opening its doors in early 2022, the Student Pantry was met every week by a long queue of people and the food was cleared out within minutes.

We provide for the collection of organic food waste in all food venues across campus – this is a requirement of all catering partners to have in place and we encourage students to utilise the bins correctly through awareness campaigns. We work closely with our catering & commercial partners who operate the cafes, bars, restaurants, student residences and venues across

campus to ensure they are aligned with our waste management goals. Catering partners are required to abide by our Waste Management Policy and track the amount of waste they produce as well as the recycling rate. Each venue must provide food & mixed recycling bins as well as general waste at a minimum and provide adequate signage. Catering partners have gone further and introduced organic food waste bins in all venues as of 2020.

In 2023, 52.162 tonnes of food waste was measured in campus catering outlets. This represents a 11% decrease in food waste when compared to 2022.

Water

University of Galway is committed to reducing bottled water consumption on campus by increasing drinking water facilities, improving signage and implementing a programme of education and awareness. The University has installed drinking water refill points throughout the campus, inside and outside buildings. The locations of these fountains are displayed on a drinking water map (available here) which is shared with the campus community. Refillable water bottles have been distributed to incoming first year students and at special events.

University of Galway is committed to the effective and efficient use of water throughout the campus and the appropriate treatment, management and disposal of wastewater. The University is striving to reduce its water usage and increase the use of harvested rainwater through a series of measures, including: water leakage detection and repair programme, education and outreach, process-related efficiency measures, greywater and rainwater harvesting.

The University of Galway Water Stewardship Charter outlines our key actions and targets. The Charter commits to maintaining and achieving further reductions in water usage on campus and to highlighting the importance of water of as a critical and limited resource. It aims to ensure that our future water professionals are cognisant of best, sustainable practices in water resource management, treatment and supply, through research-led teaching and on-campus applied solutions. The Certified Water Stewardship badge demonstrates that key staff have undertaken a course designed to show leadership and set goals/targets in reducing water consumption.

In 2023, the University consumed 68,747 m^3 of water. This represents a 13% decrease in water consumption since 2019.

Single Use

As of August 2024, the University and on-campus catering outlets have ceased using disposable coffee cups. This is the culmination of engagement with catering companies and promoting reuseable cups, including the introduction of the 2GoCup deposit-and-return scheme.

As per our Sustainability Strategy, we work with staff, students and visitors to eliminate single-use plastics for water consumption by extending the network of drinking water fountains across the campus. See section on water above.

As part of Galway Green Labs programme, we seek to reduce single-use laboratory plastics and promote the use of green products/alternatives. We substitute single-use plastic with other reusable materials and work with suppliers to reduce packaging plastic.

Other Materials

The University has made great strides in the reduction, reuse and recycling of waste on campus. University of Galway's Waste Management Plan gives an overview of these achievements, outlines our current processes in dealing with various waste streams and sets out some ambitious targets for the future. We have set clear guidelines through the Waste Reduction Reuse Recycling Guidelines on campus.

University of Galway is accredited with a “Zero Waste to Landfill” certificate. Zero Waste to Landfill is the process by which waste generated on the University of Galway campus is processed to maximise the recovery of the recyclable materials and that any residual waste that cannot be recycled is processed as refuse derived fuel for incineration. The energy generated, is used to generate electricity at waste to energy plants.

Bin The Bin is a binless office scheme, focusing on enhancing recycling in the workplace. It removes the traditional under-desk office bin and replaces this with dedicated recycling stations in key communal locations on every floor of the building. Three-stream waste and recycling stations are available throughout the campus. Buildings & Estates provides a waste management service for general waste, recycling, glass, organic (partial), confidential waste (partial) and WEEE waste.

Glassary is a student led equipment reuse initiative, part of the ALIVE volunteering programme, that encourages University of Galway students to divert unwanted household items from landfill. Equipment collection points are set up at student accommodation centres across the campus and students are encourage to donate unwanted white goods, household items and clothing. The items are donated to charity, or stored for the benefit of incoming students. This circular economy initiative is now in its third cycle.

6. Our buildings and vehicles

6.1. Vehicles

Promoting alternatives to car use

University of Galway is committed to sustainable transportation planning and implementing, and continuously improving and promoting sustainable transportation opportunities and programmes for the campus community. University of Galway is a National Transport Authority - Smarter Travel Campus partner. Smarter Travel Campus is a hands-on programme working with Third Level Institutions to implement campus travel plans – or actions to encourage and support students and staff to walk, cycle, take public transport or carpool on the commute to campus.

Some examples of sustainable travel facilities on campus:

- Secure and covered bike park
- Accessible, family friendly covered bicycle parking
- Bike sharing station
- An Mheitheal Rothar community bicycle workshop
- Electric vehicle charging spaces
- Showers, changing rooms and lockers
- Fully signposted riverside walking and cycling route
- Accessible route

Phasing out parking

The Climate Action Mandate requires: “Phase out the use of parking in buildings that have access to a range of public transport services and active/shared mobility options for the majority of staff/visitors, while providing that sufficient accessible parking is maintained for those with physical mobility issues.”

Parking on the University campus is restricted. There are different types of spaces on campus, including spaces for staff permit holders only, student permit holders only, shared use (staff student permit holders), visitor/non-permit holder pay-and-display/Pay by Phone (P&D) spaces. Drivers of vehicles requiring the use of 'universally accessible parking bays' may do so if their vehicle displays a valid and registered "blue badge" permit issued by the IWA. If they have a blue badge, drivers may use any of the universally accessible bays for free throughout the University, regardless of whether they hold a permit or not.

The University Park & Ride facility is located in the North Campus and is serviced by an electric shuttle bus service.

Procurement of zero emission vehicles

We procure only zero-emissions vehicles, unless there is no viable option. We are committed to continuing the process of upgrading our university transport fleet with electric vehicles. We continue to seek funding to replace diesel vehicles with electric alternatives. Electric vehicle changing points have been installed at various locations throughout the campus.

6.2. Buildings

Our strategy is to incorporate the principle of energy efficiency first, the use of renewable energy technologies and heat pump systems, when replacing gas and oil boiler systems. We will not use any new fossil fuel heating systems after 2023. Our design brief for all new and retrofit projects/ buildings will be to achieve nearly zero-energy building (nZEB) standard. We will use best available technologies not entailing excessive costs (BATNECC) and will incorporate life cycle cost analysis exercises in all capital projects. Up-to-date Display Energy Certificates are displayed in all public buildings.

We are cognisant of the scale of the challenge (to achieve our targets) and the cost barriers associated with designing, building, installing and commissioning energy efficient & renewable energy projects/ buildings. Our approach will be to position applications for funding as valuable propositions (from cost and environmental perspectives). It is essential that the University has a pipeline of projects ready for potential funding support (e.g. Pathfinder projects). A Building Stock Plan has been completed and uploaded. See Figure 10 for our Register of Opportunities, including deep retrofits.

7. Our wider climate action plans

The University of Galway is recognised nationally and internationally for sustainability achievements:

- Ranked as the top university in Ireland and #34 in the world for performance on the Sustainability Development Goals (SDGs);
- The only higher education institution to be designated a National SDG Champion 23/24;
- Received a Gold rating in the Sustainability Tracking, Assessment & Rating System (STARS), the premier international certification system for sustainability in higher education;
- The first in Europe to be awarded Green Lab certification; and
- Renewed Green Campus status by An Taisce.

The University of Galway Sustainability Strategy 2021-2025 sets out our vision and commitment to lead the implementation of sustainability across the university mission and beyond. Using a Learn- Live-Lead approach, our strategic aim is to embed sustainability in our culture, operational policies and governance structures and empower our communities to be champions of sustainability.

The focus of learn is to embed sustainability literacy into all aspects of university learning and research, the focus of live is to implement the principles of sustainability through campus operations and engagement activities, from a learn perspective the aim is to play a central and transformative role in attaining the SDGs by 2030.

The Community & University Sustainability Partnership (CUSP) operates through a multidisciplinary board and each member aligns to sustainability working groups which are organised around the learn-live-lead themes: research and learning, energy and GHG emissions, built environment, nature and ecosystems, health and wellbeing, and governance and leadership.

The University has signed the SDG Accord, committing to embed the SDGs into our education, research, leadership, operations, administration and engagement activities. The University is also designated a National SDG Champion 2023/24 with the aim of raising public awareness of the SDGs and highlight institutions making significant progress towards achieving them.

As of June 2024, the University is midway through the development of the next University Strategy to 2030. To date, this has included engagements, a value-based survey and a workshop on sustainability. Following the publication of the University Strategy, a new Sustainability Strategy will be developed to 2030, including extensive engagement with students, staff and communities. This will be mindful of the urgency of climate action, Ireland's climate ambitions and the University's leading role.

For further information on sustainability at the University of Galway, see https://www.universityofgalway.ie/sustainability/

Appendix 1. Public Sector Climate Action Mandate 2024

Requirement	Roadmap Section
1.1 Reduce energy related GHG emissions by 51% in 2030.	4.1
1.2 Improve energy efficiency in the public sector by 50% by 2030.	4.2
1.3 Update Climate Action Roadmaps annually within 6 months of the publication of the Climate Action Plan. Develop Climate Action Roadmaps if none are in place.	All
2.1 Establish and resource Green Teams, reporting to senior management, to become integrated drivers of sustainability in every public sector body.	2.4
2.2 Nominate a member of the Management Board as the Climate and Sustainability Champion with responsibility for implementing and reporting on the mandate.	2.2
2.3 Incorporate appropriate climate action and sustainability training (technical and behavioural, including green procurement training) into learning and development strategies for staff.	3.1
2.4 Organise staff workshops (at least annually) to engage on climate issues, including a focus on decreasing the organisation's carbon footprint.	3.2
2.5 Ensure all senior management (P.O. level or equivalent and above) and members of State Boards, complete a climate action leadership training course.	3.3
3.1 Report on the following in the Annual Report of the public sector body: • GHG emissions; • Implementation of the mandate; • Sustainability activities; • Compliance with Circular 1/2020: Procedures for offsetting the emissions associated with official air travel.	*Annual Report*
3.2 Using SEAI's Public Sector M&R System, public bodies are to report annually on implementation of the individual mandate requirements using a "comply and explain" approach.	*M&R System*
3.3 Achieve formal environmental certification for large public sector bodies, such as ISO 50001 (Energy Management Standard) or ISO 14001 (Environmental Management System), with a view to going beyond ISO 14001 to adopting Eco Management and Audit Scheme (EMAS). Specifically: 3.3.1 All public sector bodies with an energy spend greater than €2 million per annum to achieve ISO 50001 certification by end-2024; 3.3.2 All remaining public bodies to implement energy management programmes as per SEAI's energy management guidance (S.I. 426 of 2014) and report to SEAI annually on its M&R system.	5.1
3.4 Green Public Procurement • Implement Green Public Procurement, using the EPA Green Public Procurement Guidance and criteria/Office of Government Procurement's online Green Public Procurement Criteria Search tool as resources.	5.3
3.5 Construction 3.5.1 Specify low carbon construction methods and low carbon cement material as far as practicable for directly procured or supported construction projects from 2023. 3.5.2 Adhere to the best practice guidelines for the preparation of Resource and Waste Management Plans for construction and demolition projects for directly procured or supported construction projects from 2024.	5.4
3.6 Food Waste 3.6.1 Measure and monitor the food waste generated on premises from 2024, using a standardised approach to food waste measurement set out in the EPA Protocol/Pathway.	5.5

3.6.2 All new contract arrangements related to canteen or food services, including events and conferences, to include measures that are targeted at addressing food waste, with a specific focus on food waste prevention and food waste segregation.	
3.7 Paper 3.7.1 Review any paper-based processes and evaluate the possibilities for digitisation so it becomes the default approach. Eliminate paper-based processes as far as is practicable. Where paper must be procured, ensure that recycled paper is the default. 3.7.2 Measure and monitor paper consumption	5.2
3.8 Water • Provide suitable drinking water refill points for all staff and in any premises accessed by the public and measure and monitor usage of the refill points.	5.5
3.9 Single Use 3.9.1 Cease using disposable cups, plates and cutlery in any public sector canteen or closed facility, excluding clinical (i.e., non-canteen healthcare) environments, and in publicly funded advertising or broadcasting, where feasible. 3.9.2 Progressively eliminate all single use items within the organisation and from events organised, funded, or sponsored.	5.5
3.10 Other Materials 3.10.1 Support Ireland's Producer Responsibility Initiatives in the collection and recycling of products. 3.10.2 Use waste collection services that are segregated into a minimum of 3 streams – residual/general waste, recycling waste and organic/biowaste.	5.5
4.1 Promote the use of bicycles (including push bikes, electric bikes, and cargo bikes) and shared mobility options as an alternative to car use among employees and visitors by creating and maintaining facilities (both inside and outside of buildings) that support such options, including secure and accessible bicycle parking, shared mobility parking, and charging stations, as appropriate, with a view to achieving the National Transport Authority's Smarter Travel Mark.	6.1
4.2 Phase out the use of parking in buildings that have access to a range of public transport services and active/shared mobility options for the majority of staff/visitors, while providing that sufficient accessible parking is maintained for those with physical mobility issues.	6.1
4.3 Display an up-to-date Display Energy Certificate in every public building that is open to the public to clearly show energy use.	6.2
4.4 The public sector will not install heating systems that use fossil fuels after 2023, in (1) new buildings, and (2) "major renovation" retrofit projects as defined in the Energy Performance of Buildings Directive (EPBD) unless at least one of the following exceptions applies: The fossil-fuel use is only through using electricity from the grid. • There is no technically viable non-fossil alternative (generally only related to applications for a purpose other than space heating). • The installation of a renewable space heating system would increase final CO2 emissions. • The fossil-fuel use is provided for backup, peaking, or operational purposes (and makes up less than 10% of annual heating energy). • Where the direct replacement of existing fossil fuel heating is required for an emergency maintenance purpose.	6.2
4.5. In relation to existing buildings: 4.5.1 Public sector bodies and sectoral groups with a large estate should commence a deep retrofit of at least one building in 2024 in pursuit of the 2030 51% emissions reduction target. The planning of deep-retrofit building measures will be undertaken at sectoral level for homogenous sectors, e.g., in relation to the Civil Service, the OPW will plan the deep retrofit of Government Departments' building stock. 4.5.2 Public sector bodies and sectoral groups with a large estate should develop a portfolio building stock plan (including determining the buildings necessary for their	6.2

activities), in line with guidance published by SEAI, by end 2024 to mobilise large scale programmes towards meeting the Climate Action Plan targets. 4.5.3 As part of the building stock plan, large public sector bodies and sectoral groups with a large estate should undertake data gathering and consider the long term (to 2050) retrofit key performance indicators to upgrade their building stock to Nearly Zero Energy Buildings or Zero Emission Buildings as outlined in the EPBD proposal and recast Energy Efficiency Directive. 4.5.4 Small public sector bodies should include a basic building stock analysis or statement as part of their Climate Action Roadmap, in line with the guidance published by SEAI.	
4.6 Procure (purchase or lease) only zero-emissions vehicles from the end of 2022, enabling Ireland to go beyond the requirements of the EU Directive, amending Directive 2009/33/EC on the promotion of clean and energy-efficient road transport vehicles (EU Directive 2019/1161, the Clean Vehicle Directive) and act as an international leader in this area. An exception applies where the vehicle is exempt under European Communities (Clean and Energy-Efficient Road Transport Vehicles) (Amendment) Regulations (S.I. 381 of 2021). Public sector procurement contracts for delivery and haulage should specify zero-emissions vehicles where possible. 4.6.1 As an enabler for the switch to zero-emissions vehicles and meeting Climate Action Plan targets, in 2024 public sector bodies with a vehicle fleet should develop a plan for installation of charging infrastructure in relevant locations. The plan should align installation of infrastructure with timelines for decarbonisation of the body's fleet. The plan should be included in the body's Climate Action Roadmap.	6.1