

*From commitment to reality*

# Delivering ambitious decarbonisation targets in the higher education sector



# Executive summary

Across the UK, universities and other higher education institutions are tackling decarbonisation head on, setting ambitious targets that are decades ahead of the UK's ambition to be net zero by 2050 through incorporating their indirect scope 3 emissions.

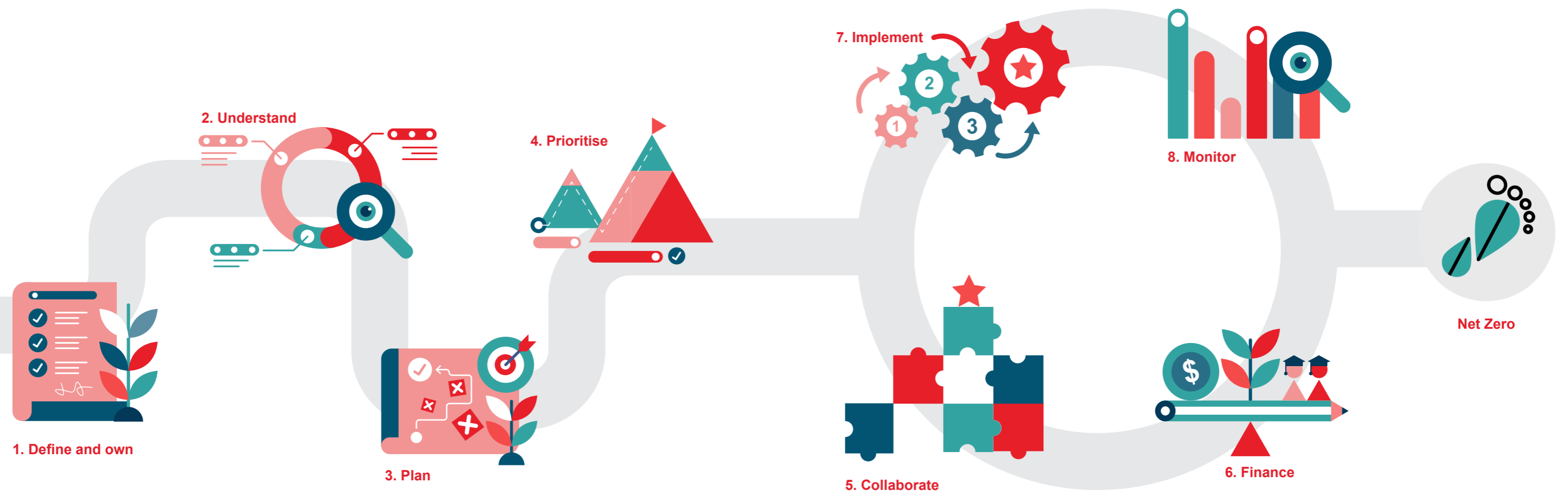
The COVID-19 pandemic presented unprecedented pressures on the sector, not only affecting the viability of delivering on these ambitious targets but also leading universities and other higher education institutions to fundamentally change the way in which education is delivered.

Fast forward three years and the sector is primed for growth with development funding and projects kickstarting post-pandemic. However, uncertainty remains around how to step forward and unlock university wide decarbonisation opportunities.

As global sustainability consultants, our engineers, planners and designers are working with university estates teams across the world to meet these challenges head on.

In this report we bring together our specialist advisory expertise across property, sustainability and decarbonisation, to outline a route forward for the sector on the journey towards net zero.

## How does the higher education sector move forward to achieve its ambition to deliver successful decarbonisation?





# Foreword

The need to decarbonise has never been greater. Commitments to net zero are reshaping our approaches across business, industries, and markets worldwide.

The climate emergency has led to both a shift in public and political attitudes, culminating in mass school protests in 2019 and an increased level of scrutiny on the need to decarbonise, leading the UK Government to revise their original target of an 80% reduction in emissions and be net zero by 2050.

This changing landscape resulted in increased urgency from across the public and private sector to systematically rethink traditional business assumptions such as costs, risks, regulatory environment and the use of materials and resources with several institutions setting ambitious decarbonisation targets.

For universities and higher education institutions, these targets were often decades ahead of the UK's net zero 2050 target and encompass a significant proportion of their indirect emissions.

Post-COVID, the higher education sector, as with many other sectors, had to adapt quickly to a new model of operation. We are now emerging into a post-COVID world with short time scales to deliver on decarbonisation commitments with a broad range of challenges to overcome.

At Arup, we are committed to supporting the sectors transition to net zero. Our systematic approach to campus decarbonisation allows our clients to visualise where change can be most effective, affordable and practical in the short, mid and long term. We work with universities and other higher education institutions to address the pressing issues facing the sector today, whilst also futureproofing to mitigate against the challenges of tomorrow.

# Introduction

## Footprint

The UK has over 160 universities and higher education institutions<sup>1</sup>. This equates to 1.4 million tonnes of CO<sub>2</sub>e annually<sup>2</sup>, associated with the burning of fossil fuels and purchased electricity for the 133 institutions that report on their emissions.

This is only part of the picture. These figures do not account for the indirect emissions associated with the sector’s upstream and downstream activities. These indirect emissions are also known as scope 3 emissions and, for a typical university, are primarily associated with the purchasing of goods and services, student accommodation, student commuting (which includes transport between their home address and their term time address), business travel, and financed sources<sup>3</sup>.

Decarbonising these emissions relies heavily on interventions to change behaviours and the conscious choice of individuals. This is much more complex and difficult to plan for, measure and influence when compared to heat and energy decarbonisation approaches.

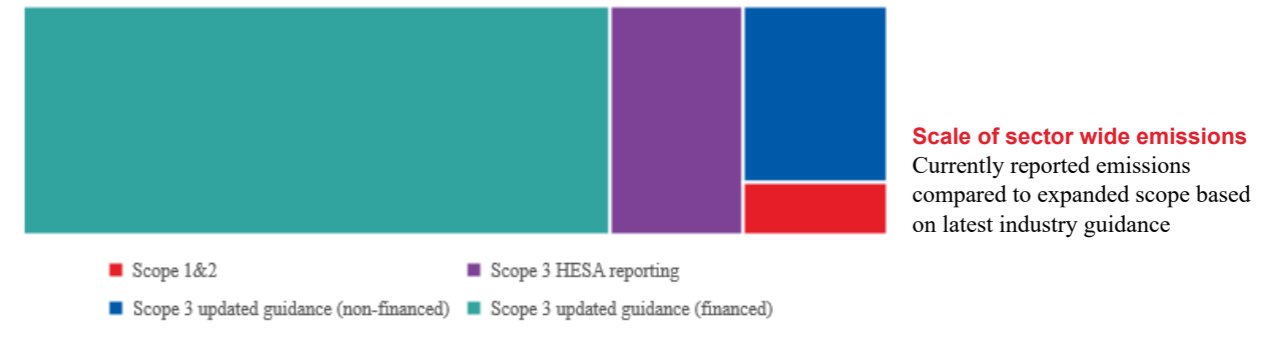
Scope 3 reporting boundaries and quantification methods currently vary greatly across the sector and, as such, it is difficult to aggregate the total scope 3 footprint for the sector. There are currently efforts to standardise emissions reporting across the sector with a recently published guidance, ‘Standardised Carbon Emissions Reporting for Further and Higher Education’<sup>4</sup>. This guidance is welcomed, but likely to pose as a challenge to some universities, due to increased reporting requirements.

Taking this updated guidance into account, it is estimated at a sector level that the non-financed scope 3 emissions could be over eight times greater than the reported scope 1 and 2 emissions. Where financed scope 3 emissions are included, this could be over twenty-five times greater<sup>5</sup>.

| Scope 3 emission source   | HESA reporting | Updated guidance |
|---|----------------|------------------|
| Waste   | ✓              | ✓                |
| Water   | ✓              | ✓                |
| Business travel   | ✓              | ✓                |
| Staff and student commuting   | ✓              | ✓                |
| Supply chain (purchased goods and services) including logistics                           | ✓              | ✓                |
| Capital goods   | ✗              | ✓                |
| Fuel and energy used to transport fuel and energy to the institution                      | ✗              | ✓                |
| Leased buildings and vehicles   | ✗              | ✓                |
| Staff homeworking   | ✗              | ✓                |
| UK student travel and international student travel – term to home address                 | ✗              | ✓                |
| Student accommodation   | ✗              | ✓                |
| Stocks, shares, investments and endowments including pension schemes (financed emissions) | ✗              | ✓                |

## Sector targets and progress

In 2010, a sector-level carbon reduction target was set to reduce scope 1 and 2 emissions by 43% between 2005/06 and 2020/21 – 59% of UK universities failed to meet this target<sup>6</sup>.



However, for many universities, climate action is becoming a strategic imperative. This is driven by socially and environmentally focused values, in response to growing pressure from funders and partners, staff and current and prospective students.

Many in the sector have set ambitious targets for net zero, which are often well in advance of the UK’s net zero 2050 target and for many in the sector, include a commitment against some of their scope 3 emissions. Of the 162 higher education institutions in the country, 55 have a net zero or carbon neutrality commitment covering their scope 1 and 2 emissions, some including all or part of their scope 3 footprint.<sup>7</sup> Whilst this is only about 34% of the UK’s universities, these targets cover approximately 60% of the sectors scope 1 and 2 emissions.<sup>8</sup>

If the sector can overcome previous short comings and deliver against its ambitious decarbonisation commitments, it is critical to act in an urgent but considered manner. This requires focus on both the short-term wins, but also the longer term harder to abate emission streams.



1. The Higher Education Statistics Agency (HESA) publish data on all aspects of the UK higher education sector. This includes various sustainability metrics and reported GHG emissions for scopes 1-3. This data set includes 162 institutions who are listed as a dedicated higher education provider. 2. This is the aggregated emissions in the academic year 2021/22 for the 133 institutions (of the 162) who have submitted emissions data. 3. Financed emissions include all the indirect scope 3 emissions associated with a university’s investments, endowments and pensions. Conversely, non-financed includes all the other scope 3 emission sources. 4. Standardised Carbon Emissions Framework (SCEF) w w w.eauc.org.uk/scef

5. Accelerating the UK Tertiary Education Sector towards Net Zero w w w.queensanniversaryprizes.org.uk/wpcontent/uploads/2023/01/Accelerating-towards-Net-Zero.pdf 6. “Most UK universities have failed to meet their carbon reduction targets: Reducing ambition and embracing offsetting is not the solution” – Higher Education Policy Institute (HEPI) 7. SOS Carbon Targets Dataset, Student Organising for Sustainability United Kingdom, w w w.sos-uk.org/resources-file/sos-uk-carbon-targets-dataset, accessed 05/01/2023 8. Estates Management record 2020/2021, Higher Education Statistics Agency, w w w.hesa.ac.uk/data-and-analysis/estates, accessed 05/01/2023

# A pathway to campus decarbonisation

Understanding, planning, and working towards an ambitious decarbonisation commitment can be overwhelming and comes with several complex challenges.

From our experience, the successful delivery of a decarbonisation commitment can be broken down into eight key steps. Across each of these stages there will be certain challenges and considerations.

This document has been developed to capture and consolidate some of the key considerations that are required across the sector. These are by no means exhaustive, but act as a good point of reference to support further exploration at your institution.

From our experience, the key steps for successful delivery are:



## 1. Define and own

The first step in any journey is to define the level of ambition and to understand who is going to be responsible for delivery of the commitment.



## 2. Understand

Understanding where key emissions sources are, will ensure efforts to decarbonise are targeted within the right areas of the university.



## 3. Plan

Decarbonisation commitments can only be delivered, where there is a clear understanding of what can be realistically achieved in terms of targets and milestones.



## 4. Prioritise

What are the most important actions? What order should they be completed and where can the biggest impact be achieved for the lowest cost?



## 5. Collaborate

Universities and other higher education institutions are interconnected entities that require support from local, national, and international stakeholders to deliver against their decarbonisation aims.



## 6. Finance

The financial costs of decarbonisation are complex. Having a clear understanding of the 'cost of decarbonising' vs 'not decarbonising' is crucial.



## 7. Implement

Moving from planning to action requires several detailed programmes, a clear understanding of who is doing what and perseverance to see it through.



## 8. Monitor

Understanding what is and what is not working is key to ensuring higher education institutions stay agile in working towards their overarching goal.

# Securing buy-in



The first step in any journey is to define the level of ambition and to understand who is going to be responsible for delivery of the commitment.



## Queen's University Belfast Climate Management Strategy

The project included university-wide surveys, online and in-person workshops and student summits, to reach as many university members as possible to develop an understanding of the issues surrounding what the task of decarbonisation entails.

The result is a Climate Management Strategy that has been co-created by a significant number of the university's staff and student population, with a bought-in and clear understanding of what's required to start working towards delivery.

- Key services provided**
- Climate and sustainability services
  - Decarbonisation
  - Sustainable buildings design
  - People and organisations

## Step 1: Define and own

### Building university-wide ownership and engagement

Historically, for many universities, the ownership of decarbonisation targets sat within an isolated department, typically an estates team with a sustainability function or personnel within it.

However, increased ambition and broader scope has meant the delivery of university targets must go beyond the remit of traditional estates or sustainability teams. Estates teams are nonetheless fundamental to the delivery of any commitment, due to the university estate having a prominent role in the decarbonisation of a range of emissions streams from heat, capital projects, commuting, to waste and water.

Where targets include bought goods and services, financed emissions or investments, business travel and international student travel (term time to home address), the role of the wider university is fundamental, and awareness and ownership must be integrated across the organisation. This requires buy-in, engagement and the right cultural context across the university; critically covering both academic and professional services departments.

In response to an increasingly expanded remit, several universities have increased their estates teams to include a broader range of sustainability professionals. In many cases, these are newly formed or rebranded teams which take a more centrally focused position in the overarching university structure. This approach has been employed at the University of Exeter where, in their recent restructuring, the sustainability team has moved centrally to sit within the finance directorate. This builds greater visibility for their crosscutting role and highlights to the wider university that the delivery of sustainability targets is a strategic imperative.

Regardless of where the team sits, the focus on building ownership and engagement across the university relies heavily on developing an awareness and understanding of the role of the individual or team in delivering decarbonisation. The role of the sustainability (or estate) team should be that of a trusted advisor, in a delivery model of shared ownership and accountability.

### Pathway to successful decarbonisation

- **Focus on engagement with senior leadership**, highlighting where other university aims are in conflict (or provide a co-benefit) with decarbonisation commitments;
- **Ensure the onus is on key academic stakeholders** to take a prominent role in the development of any commitments;
- **Use clear and concise communication** to build awareness and understanding of staff and students' roles in the delivery of decarbonisation commitments;
- **Consider the use of decentralised decarbonisation targets** for certain emission sources i.e. business travel;
- **Reshape university governance processes** so that the emissions impact is factored into the institution's decision making and business cases.

# Focused efforts

Understanding where key emissions sources are, will ensure efforts to decarbonise are targeted within the right areas of the university.

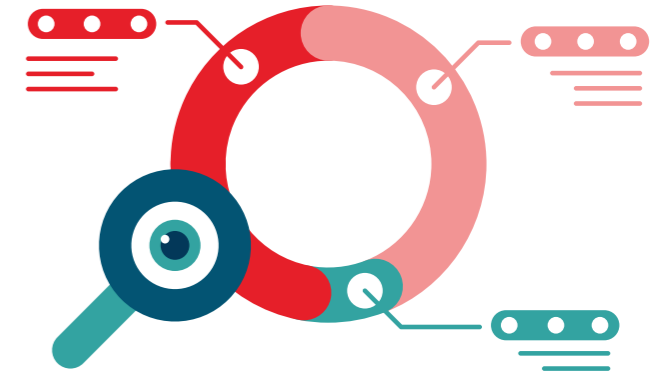


**Key services provided**  
Climate and sustainability services  
Decarbonisation  
People and organisations

## University of Exeter Scope 3 Decarbonisation Plan

Arup supported the development of a scope 3 decarbonisation plan from now through to the university's 2030 target. A key component of this plan was developing a meaningful prediction of what their emission footprint would look like in 2030.

We developed a range of future scenarios which factored in both exogenous and endogenous parameters including planned University growth and broader decarbonisation trends. This informed programmes of activities to decarbonise key emission streams, including supply chain, commuting and business travel, providing clarity for the University on their net zero commitment and a plan to help deliver it.



## Step 2: Understand

### The balance between accuracy and action

Creating an accurate picture of your emissions sources both now and in the future provides the necessary insight to develop targeted decarbonisation strategies.

This picture must be robust, to ensure efforts are spent proportionately and focused in the right areas. However, there is a balance to strike and in certain cases, a need to move away from over accurate, resource heavy accounting processes. It is important to ensure that once a robust breakdown of emission sources is developed, time is spent prioritising, planning and delivering these decarbonisation commitments.

This is particularly relevant when developing future emissions scenarios. These scenarios provide a future emission outlook under different modelling assumptions and university growth predictions. They help define the level of ambition required by a university in delivering a decarbonisation target and should not be used to accurately predict a university's emissions in the future. They can also help with the prioritisation of actions today that mitigate the emission hotspots of tomorrow - for example the use of electrification to decarbonise heating.

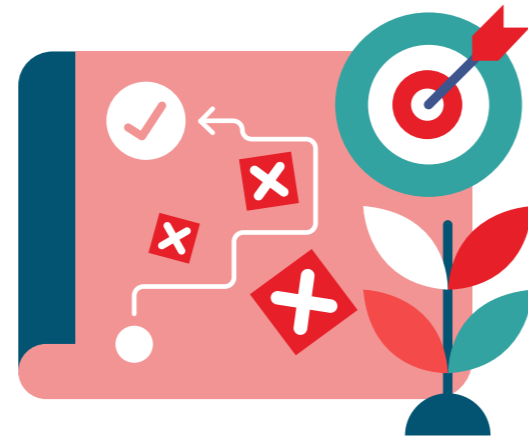
To ensure accurate reporting and benchmarking, an accurate emissions footprint, alongside a standardised approach, is fundamental for any meaningful benchmarking to take place. To date, translating the greenhouse gas protocol guidance into the higher education sector has resulted in several different interpretations, making benchmarking challenging.

The recently published 'Environmental Association for Universities and Colleges' (EAUC) 'Standardised Carbon Emissions Reporting for Further and Higher Education,' aims to rectify this. This guidance document highlights the levels of accuracy required to make meaningful decarbonisation action plans, providing direction where time is spent valuably to improve accuracy and where certain approximations are sufficient.

There will always be an element of ambiguity in emissions quantification and the necessary assumptions particularly in scope 3 reporting. It is important to be transparent with assessment methodologies and highlight where there is reduced certainty in any assumptions. The University of Oxford have set a precedent in publishing their 'Emissions Accounting Report 2019/20,' which provides a detailed breakdown of their quantification methodologies. This is an excellent example of transparency and helps build understanding and knowledge across the sector.

## Pathway to successful decarbonisation

- **Conduct a gap analysis** using the EAUC's 'Standardised Carbon Emissions Reporting for Further and Higher Education' document;
- **Use emission projections** to inform business planning, focusing on the accuracy of assumptions with high levels of sensitivity;
- **Improve accuracy** of high impact emission hotspots;
- **Aid transparency within the sector** through sharing assessment methodologies and assumptions to build upon existing knowledge;
- **Integrate automation** into the forefront of reporting processes to ensure time can be spent on developing insights.



# An engaged campus, is a successful campus

Decarbonisation commitments can only be delivered where there is a clear understanding of what can be realistically achieved.



**Key services provided**  
 Decarbonisation  
 Sustainable buildings design

## Creating a future focused campus for Sheffield Hallam University

As part of Sheffield Hallam's Climate Action Plan, we estimated the carbon emissions impact of their planned campus expansion and student term to home address travel.

We created two bespoke tools for Hallam to target, track and model their progress towards zero carbon. One which outlines direct decarbonisation actions for Scope 1,2 and 3 and the HECAT toolkit which identifies the potential for climate action across the whole institution.

## Step 3: Plan

### Understanding conflicting strategic aims

Across the sector, universities are looking to expand in several ways, from new buildings and research facilities, through to increased student numbers and a drive for a greater percentage split of international students.

Each of these aims come with an emissions impact. In particular, the impact of international student travel to and from their home and term time addresses. For many universities, international students are a key contributor to university income. Their higher fees contribute to the development of campus and research facilities, improving university rankings which in turn attracts more international students.

Certain universities are aware of the environmental impacts that these policies have and are taking bold steps to understand and mitigate their impact. This approach has been supported with the recently published 'Standardised Carbon Emissions Reporting for Further and Higher Education', which scopes in the impact of student home to term address travel.

This provides several challenges. The University of Oxford<sup>9</sup>, estimates that the emissions from student term to home travel is 14% of their total footprint. There is currently no clearly defined (or proven), short to medium term decarbonisation route map for the aviation sector, so this percentage is going to increase. Drastically reducing these emissions and working toward net zero carbon will require a rethink in the way that universities currently operate. In the short term, it is important that universities look to acknowledge this impact, aim to accurately report on these emissions and start doing what they can to reduce them.

Physical campus expansion through the construction of new buildings, is another area where there is a clear conflict between decarbonisation and the strategic direction of many universities. New buildings come with large emissions price tags, namely through the procurement materials and the construction processes required in their delivery.

As a sector, the construction industry is quite mature in understanding and quantifying its carbon impact. This includes numerous industry guidance documents, standards, and targets for what 'good,' looks like in the delivery of new buildings. Universities should challenge their supply chains to deliver ambitious performance targets and ensure that they are doing all that they can - as places of innovation and research - to help decarbonise the broader construction sector.

Being open and transparent about these strategic conflicts is key to building a consensus across higher education for opportunities to reduce emissions. Completely decoupling growth in these areas from an increase to a university's emissions, is extremely challenging and will rely heavily on factors outside of an institution's control.

Over the coming years the sector needs to seriously focus upon mitigating its impact and exploring ways to decarbonise some of the biggest contributing sources to its footprint.

## Pathway to successful decarbonisation

- Understand the emissions impact of key university strategies;
- Avoid claims of green washing by ensuring net zero commitments include the emissions in high impact areas;
- Explore interventions to minimise students' flights over the short to medium term including the use of branch campuses, longer term times for international students, alongside a better online teaching provision;
- Set ambitious whole life carbon targets for new construction works;
- Drastically reduce the need for student flying longer term through the exploration of new operating models.

<sup>9</sup> www.sustainability.admin.ox.ac.uk/files/environmentalsustainabilityreport2020-21.pdf



# A cultural shift in the mechanics of universities

What are the most important actions?  
What order should they be completed?  
Where can the biggest impact be achieved for the lowest cost?



## Adaptive Pathways - a long-term approach to future uncertainties

The 'Adaptive Pathways' model is a specific method of achieving a long-term strategic vision or goal whilst dealing with deep future uncertainties such as climate change. Working alongside Conwy, Newport, and Pembrokeshire local authorities, we developed local area energy plans which explored the most effective route for the local area to contribute towards meeting both the national and local net zero target. This resulted in a costed and spatial plan that identified the change needed to the local energy system and built environment.

Drawing on case studies from outside of the university sector helps to highlight how other industries and organisations are dealing with the challenge of prioritising actions today, which come with no regrets in the future.

**Key services provided**  
Climate and sustainability services  
Decarbonisation



## Step 4: Prioritise

### Prioritising longer-term 'bigger wins'

Successfully delivering net zero commitments across universities and other higher education institutions will require an approach that includes phasing many technical interventions and huge cultural shifts.

The pressing nature of so many targets can make prioritisation difficult, with everything feeling like it needs to happen at once. Priority actions should be balanced to ensure it is not just easy wins being phased first. The longer-term programmes of work that bring the necessary structural and system changes need to start now, with enough time for them to be embedded before commitment dates are reached.

Certain actions that will not result in direct, measurable decarbonisation, also need to be factored into plans. These can range from university wide culture change programmes - which facilitate and unlock significant gains on other programmes - to reporting systems, which allow the progress of other interventions to be captured in annual foot printing i.e., travel data collection methods.

Universities with progressive scope 3 net zero targets - i.e., 2030 or sooner - will require an offsetting component. If offsets are to be utilised, they should be of the highest quality and informed by guidance such as the Oxford Offsetting Principles.

It is important that this is not seen as an easy way out, and that universities prioritise decarbonisation first, up to and past their initial net zero commitment.

Where universities are unsure how stretching a decarbonisation commitment should be, a science-based approach (i.e., targets in line with the scale of reductions necessary to keep global warming levels below 2°C) is always recommended.

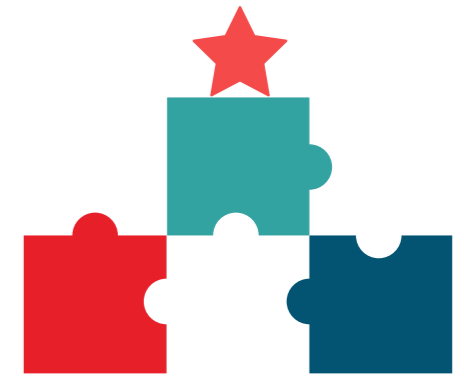
The timescales and the need for urgency are pushing universities to take certain technological approaches. It is important that any decisions made now, do not have a negative impact in the future. Universities should prioritise solutions that facilitate long-term whole life carbon reductions. For scope 1 and 2 decarbonisation strategies, a fabric first approach should be employed. Heat networks should be considered as a supporter transition technology and options should be kept open for future development for the hydrogen economy.

## Pathway to successful decarbonisation

- **Employ culture change programmes** that aim to shift the culture of a university;
- **Ensure technological improvements are considered holistically** and allow for future flexibility in technological advancements;
- **Use a science-based method** for decarbonisation targets and any use of offsets.

# Uniting the sector for a common cause

Universities and other higher education institutions are interconnected entities that require support from local, national, and international stakeholders to deliver against their decarbonisation aims.



## Step 5: Collaborate

### External collaboration for a sector wide approach to decarbonisation and local influence

Delivering world class research is a core function and aspiration for many universities. For a university this requires attracting top academics, through state-of-the-art facilities and institutional freedom for researchers to manage their own time, projects, and budgets.

Academics are in part, measured on the amount of research funding that they can bring to a university and the way certain funds are awarded, encourages budget allocations to be spent in full. This can create a culture of unnecessary spending. A key lever in reducing a university's procurement emissions would include cutting out any unnecessary spending.

The need to travel to conferences and seminars is a core component of academia, providing opportunities to network, build global influence and share new research findings. In certain institutions, presenting at international conferences is a requirement for career progression. Until the global aviation industry can demonstrably show progress on a route to net zero with proven technological advancements, demand reduction is the only option. Similarly with the need to curb the impact of international student flights, the university sector and academic community needs to also reduce its business travel impacts.

Collaboration across the sector will be required to achieve the necessary culture shifts, to move away from these high emission practices. Only through sector wide consensus, buy-in from the academic community and their governing bodies, will change be possible. Working towards that aim will require individual institutions to take responsibility for initial changes to their internal practices. This has been evidenced at the University of Cambridge, where their human resource (HR) policies have been updated to remove the need for the delivery of international conferences, as part of their academic career progression.

The role of a university goes beyond the walls of the institution and the collaboration delivered at a sector level. They have an important role to play as civic entities, supporting and driving decarbonisation in the local area. This should be delivered by first setting an example to follow before support, lessons learnt, and knowledge is shared with local businesses and institutions.

This approach is being championed by Manchester Metropolitan University who first started delivering Carbon Literacy training to their students and staff in 2012. This was followed by the delivery of this training externally, to over 2,400 participants and over 240 trainers, who have then gone on to deliver Carbon Literacy training to more than 7,500 further participants.

### Pathway to successful decarbonisation

- **Vocalise challenges** within your institution with wider working groups to build sector wide consensus;
- **Utilise industry groups** - such as EAUC working groups and / or the Russell Group - to leverage positive steps and instil best practice cross-sector;
- **Successful decarbonisation is dependent on collaboration** with internal and external stakeholders to raise awareness of any challenges within the university's community;
- **Positively focus on any barriers at your university to help change cultures** and systems that encourage high emissions activities.



### University of Liverpool Carbon Management Plan

Arup delivered a comprehensive Carbon Management Plan (CMP) that not only considered Scope 1 and 2 emissions for the University of Liverpool's estate through to 2030, but also developed a tool that allowed the university to test different scenarios and generate a carbon trajectory based on the boundaries and conditions specified.

Alongside this, we provided the university with an engaging and informative report that described the current energy infrastructure across the campus in a bid to help stakeholders and students with a non-technical background better understand the energy strategy.

#### Key services provided

- Decarbonisation
- Sustainable buildings design
- People and organisations



# Understanding barriers to entry and funding

The financial cost of decarbonisation is complex. Having a clear understanding of the ‘cost of decarbonising’ vs ‘not decarbonising’ is crucial.



## University of Gloucestershire boiler replacements

As part of the University’s plan to remove fossil fuel usage across their Oxstalls and Francies Close Hall campuses, Arup supported the application for a Salix grant to install three separate heat pump schemes to replace gas boilers across the University: including within modern residential blocks, a listed chapel, and a Victorian college.

Our expertise ensured the optimum design for each individual site, saving carbon whilst maintaining performance.

**Key services provided**  
[Climate and sustainability services](#)  
[Decarbonisation](#)  
[People and organisations](#)

## Step 6: Finance

### The cost of decarbonisation

One of the key questions facing all universities is how to pay for their decarbonisation programmes. These costs can come in a range of different forms from large capital expenditure to increased operational costs. Understanding what these costs are and whether they are capital or operational is of the utmost importance.

Typically delivering scope 1 and 2 decarbonisation programmes are very heavily focused on capital expenditure, with operational savings helping provide return on investment. When an eye watering figure is placed on delivering a decarbonisation plan it can scare certain stakeholders. Clearly communicating what is truly uplifted additional cost, beyond already planned campus and maintenance expenditure is key for effective stakeholder management.

Once a clear picture is established for increased capital costs, several options are available to help raise funds for these works. Several universities have capitalised on the Salix funding scheme, which can pay for a proportion, or all of the costs associated with decarbonisation projects. Beyond this scheme - which comes with certain restrictions - finance for ‘green’ projects is an expanding market. There are several opportunities to use climate bonds or explore more innovative solutions such as energy as a service scheme to pay for decarbonisation.

The challenges around paying for capital costs can sometimes be more straight forward and the need to account for additional operational costs (hitting the university bottom line) may be more restrictive. Scope 3 decarbonisation will require greater investment in people and systems and therefore likely to result in additional operational costs. Before a university opts for the recruitment of new staff, they should build capacity in existing teams. The costs of these initiatives may be covered in part using ‘Revolving Green Funds’<sup>10</sup> or carbon levies placed on high polluting activities.

Acknowledging the cost of doing nothing should always be considered. Any cost benefit analysis should factor in the cost of not delivering on decarbonisation commitments, the reputational damage, and associated losses to income as a consequence. This should also factor into suitable payback timelines for certain efficiency interventions to demonstrate their long-term benefits. If money is to be spent, universities should prioritise using this money to help stimulate the local economy and increase local social value.

Lastly, where offsetting is part of a net zero strategy this cost (and its large uncertainty), should also be factored in.

### Pathway to successful decarbonisation

- **Establish a clear picture** for the capital expenditure required for decarbonisation programmes factoring in what costs are already accounted for in university expenditure;
- **Use sensible payback periods in operational costs saving analysis** to form a complete cost value;
- **Explore financing options** through Salix funding grants and other financing opportunities for ‘green’ investment projects or more innovative energy as a service schemes;
- **Review the use of Revolving Green Funds** on existing or newly proposed efficiency schemes to help pay for new projects.

10. A Revolving Green Fund is a process of setting aside energy saving costs from efficiency projects to support additional projects. A similar approach can be used where a carbon levy is placed on high emission activities.

# Taking action

Moving from planning to action requires several detailed programmes, a clear understanding of who is doing what and perseverance to see it through.



## Manchester Metropolitan University's Sustainable Buildings Framework

Ensuring sustainability practices are embedded within all new build and refurbishment projects at Manchester Metropolitan University was the key output for Arup's development of their Sustainable Buildings Framework.

Reviewing the University's current requirements, best practice across all sectors and consulting key stakeholders, allowed us to develop a new Sustainability Standard that would build upon Manchester Metropolitan's already strong culture and understanding of carbon literacy.

**Key services provided**  
Sustainable buildings design  
Finance and economics



## Step 7: Implement

### Creating a culture to deliver ambitious commitments

Successful implementation will require a shift in most university cultures, regardless of if their strategy is integrated, or if their delivery model is built upon shared ownership and accountability.

Longer term within an organisation, stakeholders will buy into what is valued and rewarded by the institution. The choice of an individual is also heavily reliant on what is cheaper and more convenient. Decarbonising emission streams that require substantial changes to the choice that individuals make, will only be possible in an organisation that builds a culture which encourages these behaviours.

The easy-to-influence emission streams are typically the smaller proportion of a university's footprint, which for the most part can be mitigated through technical solutions. For those emissions that are harder to influence – procurement, business travel, student travel, etc. – a greater impact can be achieved if a university can create a culture of change that both influences and changes the behaviours of its staff, students and external partners.

In order to truly take action and implement these programmes of change, universities must galvanise people and mobilise organisations to drive and implement a fundamental shift in the model of 'business as usual.'

This multifaceted complex challenge will not happen overnight. Conventional thinking on decarbonisation now needs to move beyond the technical and focus on how it will be embedded into the organisation, its governance and culture.

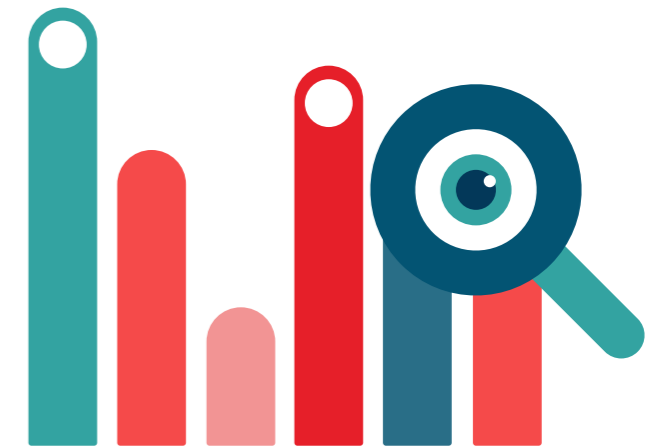
To simplify this problem, a successful outcome will require strategic direction which signals to people what the organisational priorities are, which will then trickle down into business practices and ways of working resulting in a culture of people doing things differently.

### Pathway to successful decarbonisation

- Understand where your key opportunities, risks and challenges are to develop a successful change plan that is fit for purpose and realistic in terms of investment required;
- Define the required cultural shift and create a tailored plan to move from the current to the future state;
- Recognise and celebrate success through the introduction of new awards schemes and processes.

# Accelerating and managing the transition

Plans need to be iterative, enabling universities to understand what is, and is not working to remain agile and work towards their overarching goal.



## Step 8: Monitor

### Confidently monitor progress with meaningful data

One of the biggest battles of trying to monitor progress is in the limitation of certain quantification methods. Where the quantification of emissions relies heavily on restrictive assumptions, demonstrating decarbonisation is sometimes not possible. This is particularly relevant in certain scope 3 emission categories. For example, the use of spend based calculation methods to estimate procurement emissions, results in estimated emissions being directly proportionate to spend.

This provides several barriers, namely creating the case for investment in decarbonisation initiatives directed at these emissions streams. Working around these problems requires a clear understanding of where the reporting weaknesses are present before opportunities can be explored to improve the accuracy of any processes.

Improving some of these short comings for procurement emission calculation, is heavily reliant on university suppliers understanding and being able to provide emissions data in the correct format.

The onus is on the university to ask the right questions, of the right supplier and being willing to provide the necessary support to suppliers to help build capacity in their supply chains. For more mature sectors - such as the construction industry - universities should be looking to acquire actual carbon data from projects through whole life carbon assessments of new build and refurbishment projects.

For transport emissions, infrequent surveys with limited response rates can be equally restrictive. Across the sector, there are varying response rates from 'really good,' to 'poor' for both student and staff travel surveying. Universities should focus on surveys being easy and accessible that take no more than 5-10 minutes to complete, with the use of prizes as a good incentive. Post COVID, a key part of travel surveys should include the acquisition of data to estimate the impact of working from home and how frequently students travel to and from their home address.

### Pathway to successful decarbonisation

- Conduct a data review to identify weaknesses in existing processes;
- Explore the use of supplementary metrics to track data improvement processes i.e. percentage of procurement emissions using supplier specific values;
- Explore digital innovation to automate and support more accurate monitoring and reporting;
- Use off the shelf tools to aid efficiency and quality assurance processes e.g. EcoVadis for supplier data collection.

# Stepping forward

## Can we help you along the pathway?

At Arup, we are committed to supporting the sector transition to net zero. Our systematic approach to campus decarbonisation allows our clients to visualise where change can be most effective, affordable and practical in the short, mid and long term.

Contact us for a discussion about where you are on the pathway and how we could help with your next steps.

### Key contacts



**Tim Whitley**  
Director, Decarbonisation and Sustainability  
e: [Tim.Whitley@arup.com](mailto:Tim.Whitley@arup.com)  
t: +44 161 602 9316



**Adele Fletcher**  
Senior Sustainability Engineer  
e: [Adele.Fletcher@arup.com](mailto:Adele.Fletcher@arup.com)  
t: +44 113 237 8232



**Richard Jones**  
Associate Director, Estates Decarbonisation  
e: [Richard.Jones@arup.com](mailto:Richard.Jones@arup.com)  
t: +44 117 988 6731



**Stuart Cannon (Report Author)**  
Senior Consultant, Scope 3 Decarbonisation  
e: [Stuart.Cannon@arup.com](mailto:Stuart.Cannon@arup.com)  
t: +44 117 988 6857

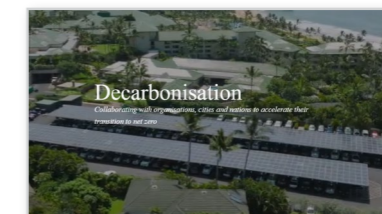


**Nicole Rossiter (Key Reviewer)**  
Associate, People and Organisations  
e: [Nicole.Rossiter@arup.com](mailto:Nicole.Rossiter@arup.com)  
t: +44 117 988 6721

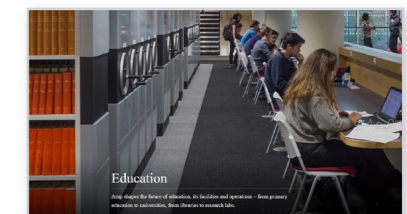
### Further reading



**Future Ready University**



**Decarbonisation at Arup**



**Education at Arup**

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