



University  
of Glasgow

# GLASGOW GREEN



THE UNIVERSITY OF GLASGOW'S  
RESPONSE TO THE CLIMATE  
EMERGENCY

WORLD  
CHANGING  
GLASGOW





The environmental crisis remains one of the most pressing issues we face. We must all take stock of what we are doing, and what more might be done.

Professor Sir Anton Muscatelli  
Principal

## EXECUTIVE SUMMARY

**The University of Glasgow recognises that the world is facing a climate emergency; urgent action is needed. This document represents the University's response to that emergency. It commits us to a very significant plan of action to achieve carbon neutrality by 2030, with interim targets over the next decade.**

Alongside that, we want to make a measurable difference by raising public understanding of climate change and the challenges it represents for humanity. We will start by engaging the energies of our staff and students – many of whom are already willing us to go further and faster in addressing this agenda. We aim to be a beacon of good practice, drawing on the expertise of our academics,

the enthusiasm of our staff and students, and a willingness to put sustainability at the top of our agenda.

Glasgow takes pride in being a world-class, world-changing University – a community of students and staff which, through education, research and knowledge transfer, makes a meaningful positive impact on our global society. We know that there is a carbon cost implication in our aspirations to be a world-changing University. However, we cannot achieve our goals at the expense of the environment; combatting climate emergency must be an integral part of our work at every level.

This strategy is about much more than shrinking our carbon footprint; it will affect every aspect of the University over the next decade and will have implications that will be felt well beyond our campuses. We seek the support of all members of the community in addressing the climate emergency and making University of Glasgow a leader in this field.



# INTRODUCTION

**This document sets out a climate change strategy and action plan for the University of Glasgow. It follows the Principal's declaration of a climate emergency in May 2019 – a statement which was reported worldwide – and which reinforced similar messages from the UK Parliament and the Scottish Government as well as other universities around the globe.**

The following sections outline the context in which we are operating, review progress to date in reducing carbon emissions and set out a route to 'net-zero' carbon emissions by 2030. In the final section, we identify a series of practical actions under five headings:

- Engaging and Empowering Our Community
- Promoting Efficiency
- Governance and Policy
- Continuous Improvement Initiatives
- Building Resilience through Partnerships

Engaging the University community more effectively is central to this strategy. We believe there are huge opportunities – people at all levels are treating the issue of climate change with a heightened sense of urgency and are willing the University to act. A second theme relates to the University's place in the world – rather than being inward looking, we want to use our influence and expertise to address key challenges and inspire others to action. At the same time, we need a strategy that is affordable and achievable – one which allows the University not only to fulfil its primary objectives, but to make sustainability an essential element in those objectives.

The strategy draws on discussions at Senior Management Group, Senate and the Student Experience Committee, consultation seminars with staff and students, and a wider survey. These discussions demonstrated that all sections of the University community agree that we need to go further and faster in addressing the climate emergency; there is also a consensus that we should monitor the impact of our actions and make our data public in an open and transparent manner.



# IN CONTEXT

## THE GLOBAL CONTEXT

We are all aware of heightening global concerns about climate change.

The Paris Climate agreement, drafted in 2015, saw **195** countries agree on the need to limit the increase in average temperature to **1.5°C**.

In 2018, the Intergovernmental Panel for Climate Change (IPCC) published a special report which indicated that limiting global warming to 1.5°C would require 'net zero' carbon emissions by around 2050 (IPCC, 2018); the Panel recognised that any additional warming above 1.5°C would significantly worsen the risk of drought, floods, extreme heat and poverty for hundreds of millions of people worldwide. More recently, the United Nations Environment Programme (UNEP) Emissions Gap Report stated that in order to meet the 1.5°C temperature goal of the Paris Agreement, carbon emissions would need to be cut by 7.6% a year, each year, for the next decade.

## THE LEGISLATIVE CONTEXT

The United Kingdom has also been active in this space. The Climate Change Act 2008 committed the UK government to reducing greenhouse gas (GHG) emissions by **80%** below 1990 levels by **2050**. A series of Scottish acts, announcements and reports followed, culminating in the Climate Change (Emission Reduction Targets) Scotland Act 2019; this established a legally binding net-zero target of 2045 for Scotland. It set interim targets of 75% and 90% reductions compared with 1990 levels by 2030 and 2040 respectively.

## THE REPUTATIONAL CONTEXT

As a world-changing University, Glasgow must react to the global climate crisis – it is undeniably the right thing to do given the scale of the challenge. Putting climate change at the heart of our agenda is consistent with our status as a values-driven institution which aims to change lives for the better, for our own community, for the world at large and for future generations. More broadly, we aim to be a valuable partner in international efforts to preserve and enhance the world's natural capital assets.

Successfully and vigorously addressing climate change can only enhance our global reputation. Now, more than ever, the climate emergency is prominent on the political agenda; all bodies in the public and private sectors are being held to a higher level of scrutiny in this regard. Given the academic expertise they possess and the role they play as education providers, universities have a special duty to provide leadership in thought and action. There is also strong pressure from both staff and students to demonstrate what can be achieved and to apply our research knowledge in this sphere.

Students are significantly more engaged with the climate change agenda than other sections of the population – in response to a NUS survey in May 2019, 91% of students responded that they were 'fairly or very concerned about climate change'. This is the highest percentage to date – an increase from 74% in 2016.



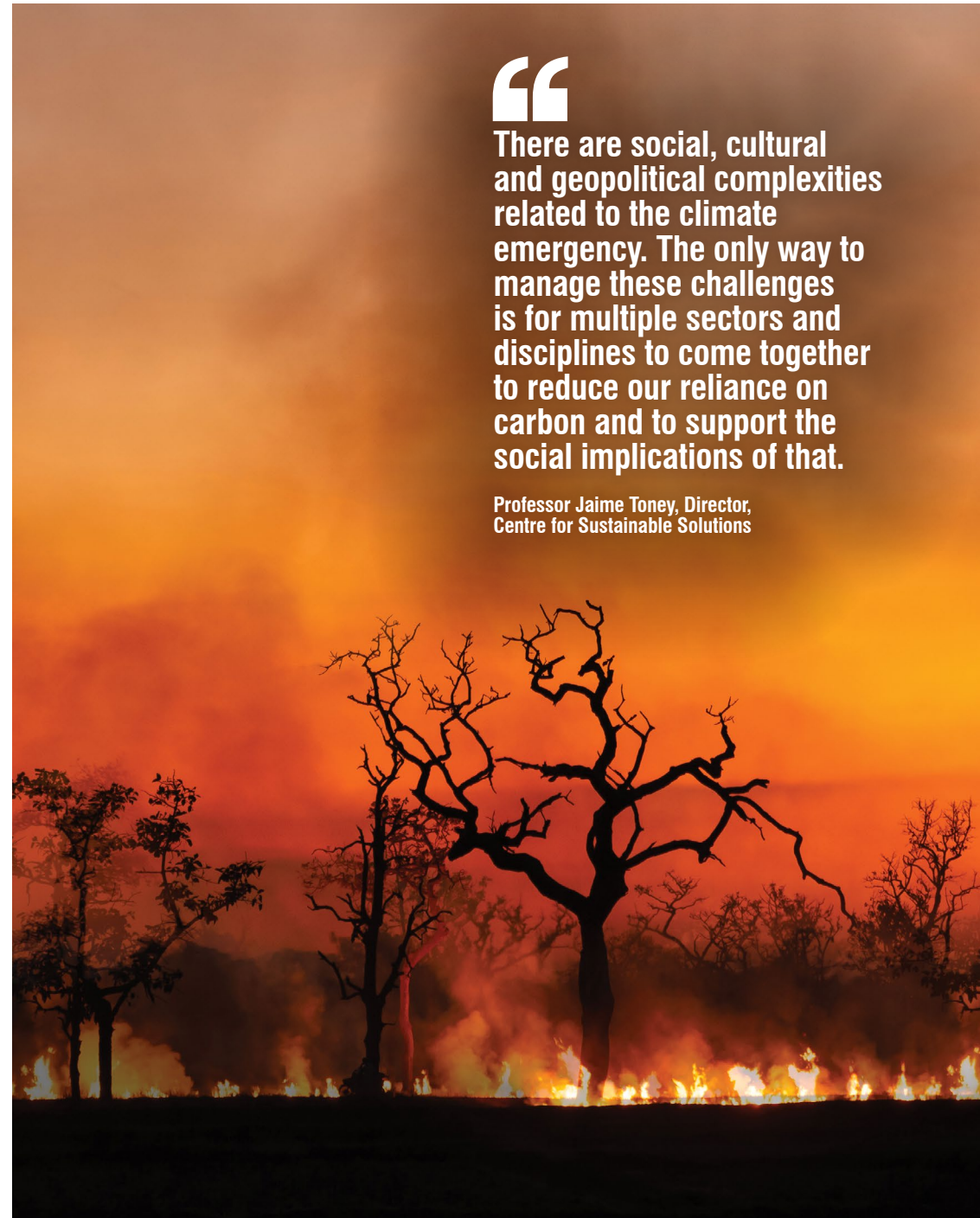
# DECLARATION OF CLIMATE EMERGENCY

In October 2017, the University of Glasgow signed the Sustainable Development Goals Accord. This committed us to combatting poverty, inequality, climate change and environmental degradation, and to promoting peace and justice. In May 2019, in response to a call from the Environmental Association of Universities & Colleges (EAUC), we made a formal declaration of climate emergency and pledged to achieve carbon neutrality by a specified date. To support this work, we commissioned consulting engineers to review our current position and advise on next steps.

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There are social, cultural and geopolitical complexities related to the climate emergency. The only way to manage these challenges is for multiple sectors and disciplines to come together to reduce our reliance on carbon and to support the social implications of that.

Professor Jaime Toney, Director,  
Centre for Sustainable Solutions

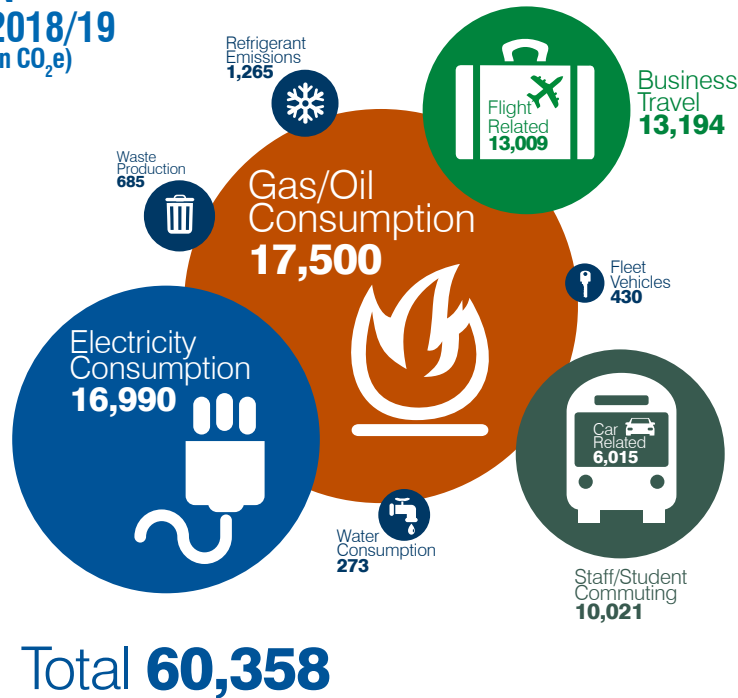


# THE CURRENT POSITION

The University has made progress in recent years. In 2015/2016, our carbon footprint was 69,591 tCO<sub>2</sub>e; by 2018/2019 the figure had reduced to 60,358 tCO<sub>2</sub>e – a decrease of 13.27%. This is largely attributed to increased efficiencies from the introduction of the Combined Heat & Power (CHP) system and the decarbonisation of the national grid. These figures include Scope 1 (direct) and Scope 2 (indirect) emissions, and also some Scope 3 emissions such as business travel.

However, looking forward, our next publicly stated target (as per our public sector climate change duties report) is a reduction in emissions to 55,500 tCO<sub>2</sub>e by 2020/2021; this would entail reducing emissions by 20% from a 2015/16 baseline. We expect to meet this target but only because the lockdown caused by the Covid-19 pandemic has dramatically reduced commuting and business travel since March 2020.

## UofG CARBON FOOTPRINT 2018/19 (measurements in ton CO<sub>2</sub>e)



**Total 60,358**

Our footprint equates to the annual carbon cost of producing the food for **22,999 meat eaters, 43,403 vegetarians, or 57,220 vegans\***

\*based on Scarborough, P., Appleby, P.N., Mzdrzak, A. et al. Climatic Change (2014) 125: 179-192

## SHRINKING OUR CARBON FOOTPRINT

According to the consultants, if the University maintained its pre Covid-19 trajectory, our carbon footprint would rise to 64,940 tCO<sub>2</sub>e by 2035 and to 75,366 tCO<sub>2</sub>e by 2045. Instead of this, we have identified a series of actions which, taken together, would reduce our carbon footprint to ca. 32,000 tCO<sub>2</sub>e by 2035. The professional advice is that further reductions below this level would be hard to achieve, but that we could aim to hold steady at that level thereafter.

The graph below displays the potential reductions in carbon emissions until 2045 (starting with the pre-coronavirus assumption that we would miss our 2020 target of 55,000 tCO<sub>2</sub>e).

The following are put forward as the type of actions which collectively will allow us to achieve a significant reduction in our carbon footprint:

1. Energy efficiency improvements involving heating, ventilation, air-conditioning (HVAC); lighting; insulation; and fabric improvements to specific buildings. These could reduce emissions by **4,200 tCO<sub>2</sub>e over ten years.**
2. Installation of a Water Source Heat Pump (WSHP) at the Garscube Campus in 2025. This is projected to displace **2,375 tCO<sub>2</sub>e.**
3. Installation of a WSHP at Gilmorehill in 2030 projected to displace **3,800 tCO<sub>2</sub>e.**

4. Deployment of an Air Source Heat Pump in suitable standalone buildings.
5. Introduction of solar panels in suitable locations.

The total cost of these works is estimated at ca. £60m, exclusive of fees and inflation. In addition, we are assuming further grid decarbonisation, no further expansion of the estate beyond the old Western Infirmary site, and a reduction in business travel flights and commuting emissions of **3% per annum** until 2035, then stabilisation. Lastly, the numbers assume that the University's staff and student headcount will grow by only 3% a year over the period.

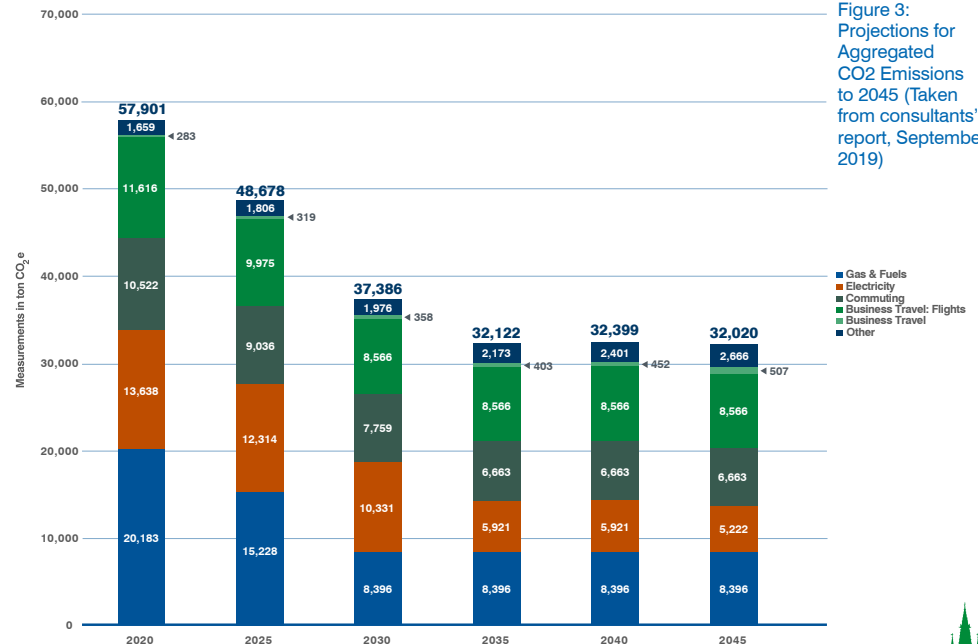


Figure 3: Projections for Aggregated CO<sub>2</sub> Emissions to 2045 (Taken from consultants' report, September 2019)





## A REQUIREMENT FOR CARBON OFFSETTING

The University will focus on reducing its carbon footprint as much as possible between now and 2035; at the same time, we will phase in the use of offsetting to help reduce our net carbon footprint during the 2020s and achieve net carbon neutrality by 2030. At that point, the University will have the option of holding its position or electing to go further and becoming carbon net negative.

Gold standard offsetting (involving carbon credits that are real and verifiable) currently costs £20 per tCO<sub>2</sub>e. If emissions are reduced to 37,000 tCO<sub>2</sub>e per annum by 2030, this would mean a cost of **£740,000 per annum** from 2030, reducing to approximately **£640,000 per annum** from 2035.

Offsetting is not just about salving our institutional conscience – it can also deliver tangible benefits. For example, reforested land or restored peatland in Scotland could provide research and learning opportunities for academics and students, while projects in low- & middle-income countries (LMICs) can improve the quality of life for people around the world; again, these interventions could be combined with research initiatives funded by the UK's

Global Challenges Research Fund and other sources. Organisations like the EAUC are exploring the scope for collaboration across the higher education sector to provide a bespoke approach to offsetting which can be seamlessly linked to academic activity; the benefits for local biodiversity and local communities will also be paramount.

As well as using offsetting to help achieve net carbon neutrality in relation to Scope 1 and 2 emissions, we will address the impact of international student travel by offsetting one return journey a year for every student from outside Europe.

We will build the financial costs of achieving net carbon neutrality by 2030 into our financial and capital plans. At the same time, we recognise that circumstances may change, and that while our goals should remain fixed, circumstances and the best route to achieving them may change.

We will therefore monitor carefully the financial cost of different interventions on the road to carbon neutrality and will be prepared to review the list of measures we implement.





## CLIMATE CHANGE ADAPTATION

### ADDITIONAL INTERVENTIONS

There are several other interventions which will be necessary and important aspects of our strategy whether or not they are essential for achieving net zero carbon neutrality.

We need to address the issue of space utilisation much more seriously than we have up till now. Despite the pressure of numbers in our growing University community, the use of space across campus is patchy – there is considerable scope for progress in this area through central management of rooms, more efficient sharing of accommodation and strategic disinvestment of inefficient buildings. Flexible working policies (on which more below) will be an important part of this story.

We will work closely with Glasgow City Council, which is also developing a plan to achieve carbon neutrality by 2030. Through our involvement with Sustainable Glasgow, we will contribute to and benefit from collaborative initiatives such as improved public transport, joined up active travel provision and low-carbon district heating networks.

Alongside efforts to increase usage of public transport and active travel, we will aim to reduce the impact of commuting by encouraging the use of electric and hybrid vehicles. Many members of staff live at a distance from the campuses and remain dependent on use of private vehicles for commuting; we will encourage a trend which is already underway towards environmentally

friendly vehicles through a range of financial and other incentives. The take-up of electric vehicles may advance more quickly than is assumed in the consultants' projections, yielding further reductions in emissions.

Finally, we will continue to foster green spaces and biodiversity on the University's campuses. We will utilise our campuses to showcase our approach to environmental sustainability, making particular use of the University's 850-acre farm at Cochno. This should help to raise awareness of sustainability issues as well as creating a more pleasant and healthy working environment. In addition, it will create a test bed for research and education by using the campus as a 'living lab'.

Under the Climate Change Scotland Act (2009), the University has an obligation to ensure our estate is resilient in the future. We have already developed a Climate Change Adaptation Plan for the University, which describes a range of adaptation actions that we will take over the next 10 years. However, the University cannot achieve climate resilience in isolation – we must continue to address this through the Climate Ready Clyde partnership. Continued collaboration in such areas as transport infrastructure, utilities and IT will be essential. Building new partnerships with like-minded organisations will enable the sharing of best practice across and beyond the city of Glasgow.



# ACTION ON CLIMATE CHANGE: KEY STRANDS

What are the specific steps we need to take to achieve carbon neutrality and resilience, and contribute more generally to the sustainability agenda? We will organise these around the following headings:

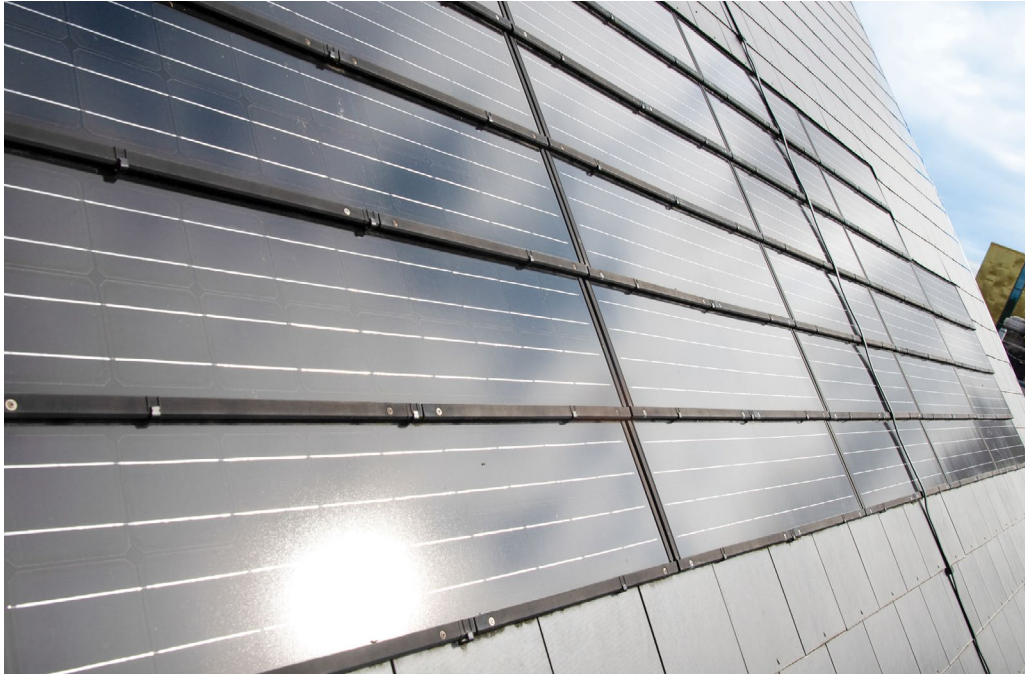


## ENGAGING AND EMPOWERING OUR COMMUNITY

Under this heading, we will ensure that the climate emergency is placed at the heart of what we do over the next 20 years. We will strive to engage the entire University community and ensure that everyone is enabled to make a difference.

Specifically, we will:

- Ensure that the forthcoming University Strategy places a strong emphasis on our commitment to addressing the climate emergency.
- Through the Centre for Sustainable Solutions, we will signpost funding opportunities for academics, publicise our sustainability-themed research and related projects, ensure that sustainability is woven into the fabric of the curriculum, develop tools to improve staff/ student knowledge and facilitate behavioural change.
- Promote research on aspects of sustainability and the UN's Sustainable Development Goals, where this matches the academic strengths of the University.
- Promote the development of Green Impact Teams across the University to encourage active engagement by staff.
- Continue to use the GUEST (student intern) network to raise awareness and promote engagement within the student body.
- Ensure clear and coherent communications regarding environmental actions at the University of Glasgow.
- Create a new ECO-HUB space on campus to allow for more effective engagement with our student body.
- Significantly enhance staff and student engagement through regular public forums to help forge an organisation-wide response to the climate emergency.
- Organise an annual careers fair, showcasing green job opportunities to our students.
- Overhaul and expand our catering offering to promote sustainable, climate-friendly, healthy diets, emphasising locally sourced produce, seasonality, organics, and vegetarian options.
- Promote flexible working that fosters a healthy work/life balance, enables home-working and reduces the need for commuting, while recognising the impact this can have on overall emissions.
- Continue to expand the range of online postgraduate programmes, professional development opportunities, short courses and MOOCs (massive online open courses) that we offer.



## PROMOTING EFFICIENCY

By promoting efficiency, we mean ensuring that our estate and infrastructure is optimally organised to reduce our carbon footprint and minimise harm to the environment. The University's Smart Campus initiative offers a major strategic platform to address this area by harnessing cutting-edge digital technology.

We will:

- Develop an asset management strategy which ensures that our estate is appropriately maintained, with a focus on improving energy efficiency and ensuring climate resilience.
- Put in place robust project governance mechanisms to ensure that any building refurbishment work is carried out with sustainable outcomes in mind.
- Improve the utilisation rates of both centrally and locally managed spaces and ensure that all newly designed and refurbished spaces adhere to agreed space specifications.
- Exploit advances in renewable energy technology to ensure that our estate is heated in the most carbon-efficient manner, employing water and air source heat pumps, and solar panels.

- Improve the energy efficiency of other infrastructure, including lighting, HVAC, fabric, and sensors, and identify the savings achieved through those initiatives.
- Ensure that sustainability is prioritised as part of a revised video and telecommunications strategy, making it easier for staff and students to reduce unnecessary travel.
- Seek a balance between on-campus and cloud-based data centres to ensure efficient power consumption.
- Improve the utilisation rates of teaching laboratories and design new research facilities with energy efficiency in mind.
- Improve the energy efficiency of laboratories through the S-labs programme and by acquiring Green Lab Certification through the Laboratory Efficiency Assessment Framework (LEAF).
- Design future buildings that are district heating network-ready and able to exploit low-carbon heat sources.
- Drive further improvements in space efficiency and foster collaborative working practices by refurbishing office spaces that facilitate agile working.

## GOVERNANCE & POLICY

Under governance and policy, we will structure our governance and management, and allocate appropriate resource under both capital and revenue to initiatives that make a significant impact on our carbon footprint.

In particular, we will:

- Ensure appropriate oversight of all climate emergency-related work through regular meetings of our Sustainability Working Group, with reference to the views of the University community sought through staff and student engagement.
- Monitor progress at Senior Management Group, University Court and other relevant forums.
- Review our capital spending plans to ensure that there is sufficient resource available to effectively respond to the climate emergency.
- Develop and implement a travel policy, with the aim of reducing the number of journeys undertaken for business, promoting active travel and reducing carbon emissions from business-related travel.
- Develop a servicing strategy for our estate that is efficient, minimises the number of vehicle movements, reduces the associated impact on pollution (carbon emissions and particulates), and prioritises the safety of pedestrians and cyclists.
- Set interim carbon reduction targets for the University which match with the UNEP Emissions Gap Report and determine the most appropriate form of carbon offsetting to help achieve these targets (ie a 7.6% reduction in emissions per year).
- Review all other existing environmental policies and action plans, in the light of our declaration of climate emergency, to ensure they are fit for purpose (Energy Strategy, Strategic Travel and Transport Plan, Waste Strategy, Biodiversity Strategy, Design Standards, Sustainable Food Strategy).
- Pursue opportunities to collaborate with the City of Glasgow and other local and national partners, such as the Sustainable Glasgow Partnership, in order to further mitigate our carbon emissions.
- Continue to implement the existing University policy of disinvesting in companies engaged in fossil fuel production.
- Use the COP26 UN Climate Change Summit (to be held in Glasgow in November 2021) to showcase our research output and impact, along with our approach to both climate change mitigation and adaptation.
- Utilise performance review and promotions structures to encourage and reward staff contributions to the strategy.
- Require papers to Court, its sub-committees and Senior Management Group to include a sustainability impact section.
- Review this strategy and action plan at five-yearly intervals, with annual interim reports.
- Monitor the impact of policies to ensure fairness and avoid placing a disproportionate burden on disadvantaged groups.



**For students, there's a real sense that universities have a duty to be leaders and drivers of change in society. Caring about the environment and sustainability is something many students want universities to take a lead in addressing. Students expect UofG to take a leading role in COP26 and show it can live up to its reputation as a world-leading, world-changing University."**

**Amy Mackenzie Smith, Vice President, Student Activities**

## CONTINUOUS IMPROVEMENT INITIATIVES

Under this heading, we will take forward a range of initiatives which help us reduce waste and contribute to the wider sustainability agenda.

- Roll out improved internal recycling and composting facilities across our estate over the next three years.
- Re-launch the University's *WARPit* asset reuse portal, with a much broader focus than just furniture.
- Install freely available water fountains for staff, student and visitors in all our main buildings.
- Phase out single-use plastics from our catering operations by December 2021 at the latest.

- Promote active travel and enable staff and students to use environmentally friendly transport methods.
- Provide electric vehicle charge points for staff on campus.
- Introduce the *Ecovadis* system for monitoring sustainability-related risks and driving improvements in our supply chain.
- Introduce *Ecosia* (which uses all profits to plant trees) as the default search engine on University computers.
- Continue to implement the actions defined in our Climate Change Adaptation Plan.

## BUILDING RESILIENCE THROUGH PARTNERSHIPS

We will lead or contribute to a range of initiatives which help prepare us for the effects of climate change over the decades to come.

In particular, we will:

- Continue to play a role as an active partner in the Climate Ready Clyde initiative, influencing decision making at a city-level, to ensure that the city region is prepared for climate change.
- Freely exchange the knowledge we have gained from the Climate Ready Clyde partnership, to ensure that this innovative approach to delivering climate resilience can be replicated elsewhere.

- Seek to raise funds from alumni and grant-giving bodies for relevant projects.
- Work with other universities and national bodies responsible for the environment to raise awareness of the climate emergency, support natural initiatives and ensure that offsetting is taken forward in a responsible, impactful way.
- Be an active member of the Sustainable Glasgow partnership and contribute to strategy development for the city region, including co-hosting sustainable solutions partnership events in the lead up to COP26.



# CONCLUSION

We commend this strategy and action plan, which reflects the strength of feeling across the University community. Staff and students alike want to see the University of Glasgow play a lead role in tackling the climate emergency – not only to eliminate its own carbon footprint but also to effect change in the UK and beyond. We will do this through the strength our example, through public engagement, via formal education, and through the world-changing research and knowledge exchange we undertake. By setting out a clear strategy and engaging hearts and minds throughout the University, we will make our own community stronger, giving staff and students a sense of belonging to a common endeavour.

**Dr David Duncan and Professor Dan Haydon**  
Co-chairs, Sustainability Working Group  
November 2020

