

Responding to the climate emergency: a whole institution approach

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&

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Overview



- Introduction to Sustainability at the University
- Climate Action Framework
- Current CA work
- Future CA plans



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What is
“sustainability”??



What is “sustainability”??

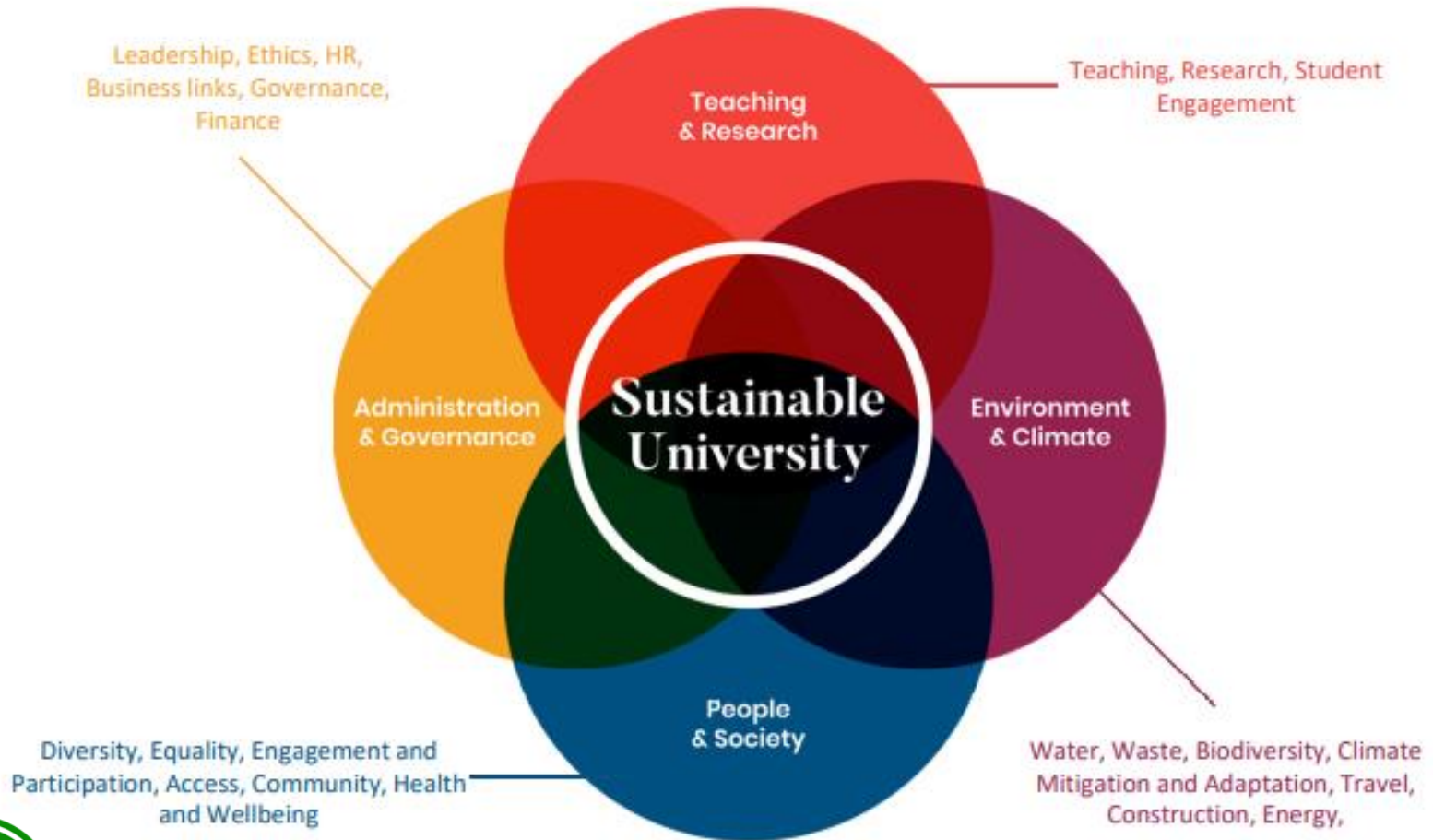


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According to UN

UNEP Sustainable
University
Framework





University Sector in UK



- Annual expenditure = £28 billion
- Contributes £73 billion to economy
- £10 billion export earnings
- 1.7 million students
- 380,000 employees >1% of all UK
- £600m energy spend

“the turnover of the sector as a whole would put it in fourth place in the FTSE 350 on revenues alone – behind only Tesco (£63 billion), Vodafone (£38.3 billion) and SSE (£30.6 billion). With a total floor area for its buildings of 26 million square metres, it is seven times bigger than Tesco and only slightly smaller than the NHS (30 million square metres).”



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- Size of a small town
 - 100 buildings
 - 20,000 students/staff
- > 250,000 m² floor area
- Energy-intensive research processes
- 4000+ student residents
- Some aging 60s/70s buildings
- Significant growth



Our impact



- Energy and water = £6m/year
- 116,000 tonnes CO_{2e}
- 9000 households' electricity
- 4000 households' water
- 3000 households' gas
- 3 x Sports Hall volume waste/year
- Business turnover ~£350m
- Purchasing spend £120m/year

Did You Know?



- First UK university to have a Carbon Plan
- Generate 9% of own electricity
- 4 CHPs ('mini power stations') on campus
- 5 sets of solar PV panels – biggest in area
- Cut carbon emissions 45% despite growth



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Did You Know?

- ~£7m invested in District Heating scheme
- Multi-£million investments in LED lighting
- Best set of 'smart metered' buildings in the sector
- Cut £100k from 1 South Chemistry energy & water



Did You Know?

- Student Switch Off running in all residences for 10+ yrs
- Coffee cup recycling – 1st UK Uni
- End-of-term waste – 30+ tonnes diverted to charities
- All waste coffee grounds composted on-site

**LEAVE
NO
TRACE**

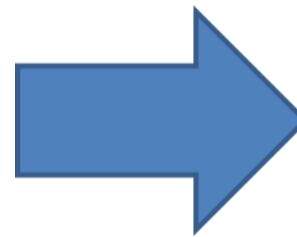


student
Switchoff
www.studentswitchoff.org



End of year waste

**£600k raised for
British Heart
Foundation
across Bath**

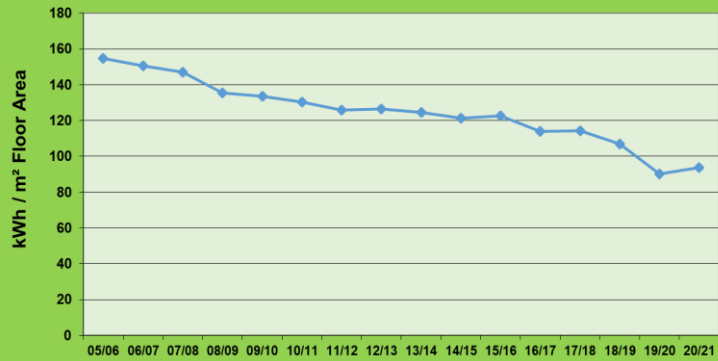


Including:

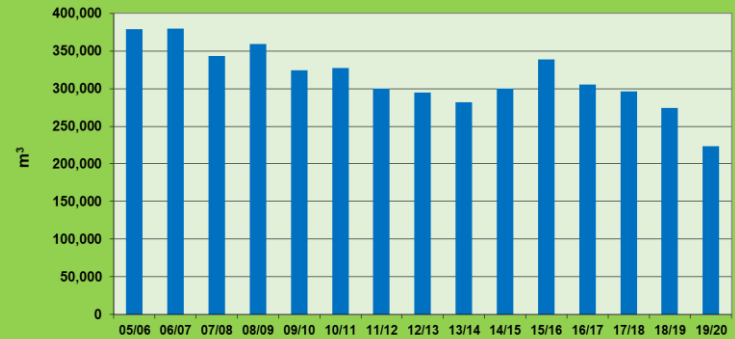
- 1.1t of food
- 22t of clothing
- 1t of metals



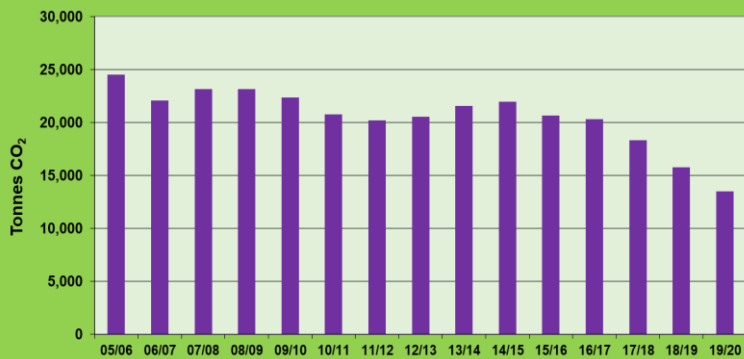
University Electricity Use per Floor Area



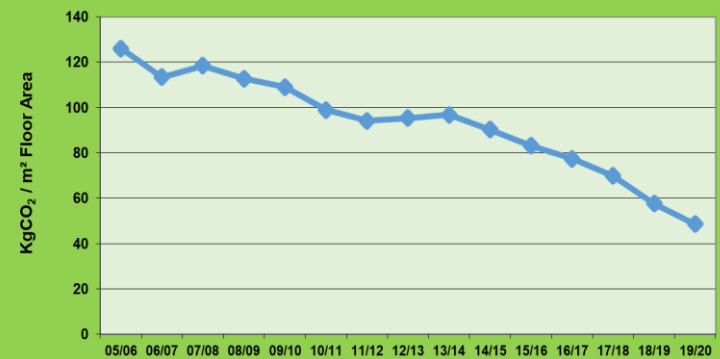
University Water Use



University Carbon Dioxide Emissions



University Carbon Dioxide Emissions per Floor Area



Our research contribution



CBOS research themes



We seek to produce world leading research that influences thinking, teaching and practice

Institute for Policy Research



A leading public policy research institute, based at the University of Bath.

Institute for Sustainable Energy and the Environment (I-SEE)

We are a leading research institute at the University of Bath looking at sustainable energy and the environment.

Centre for Climate Change and Social Transformations

A global hub for understanding the systemic and society-wide transformations that are required to address climate change.

Centre for Sustainable and Circular Technologies

CSCT unites academic expertise from the University of Bath with partners to carry out research, training and outreach in sustainable and circular technologies.

Institute for Advanced Automotive Propulsion Systems (IAAPS)

The IAAPS team has supported propulsion research for over 40 years and offers a unique combination of academic and industrial expertise in all propulsion types.



Introduction to the Climate Action Project:

- Background
- Scope
- Project plan



Labyrinth - collective mind - tree



‘**Tackling climate change is like navigating a labyrinth.** It is immensely **challenging** and **complex**, and there are a myriad of decisions that we must urgently make to avoid the worst impacts’

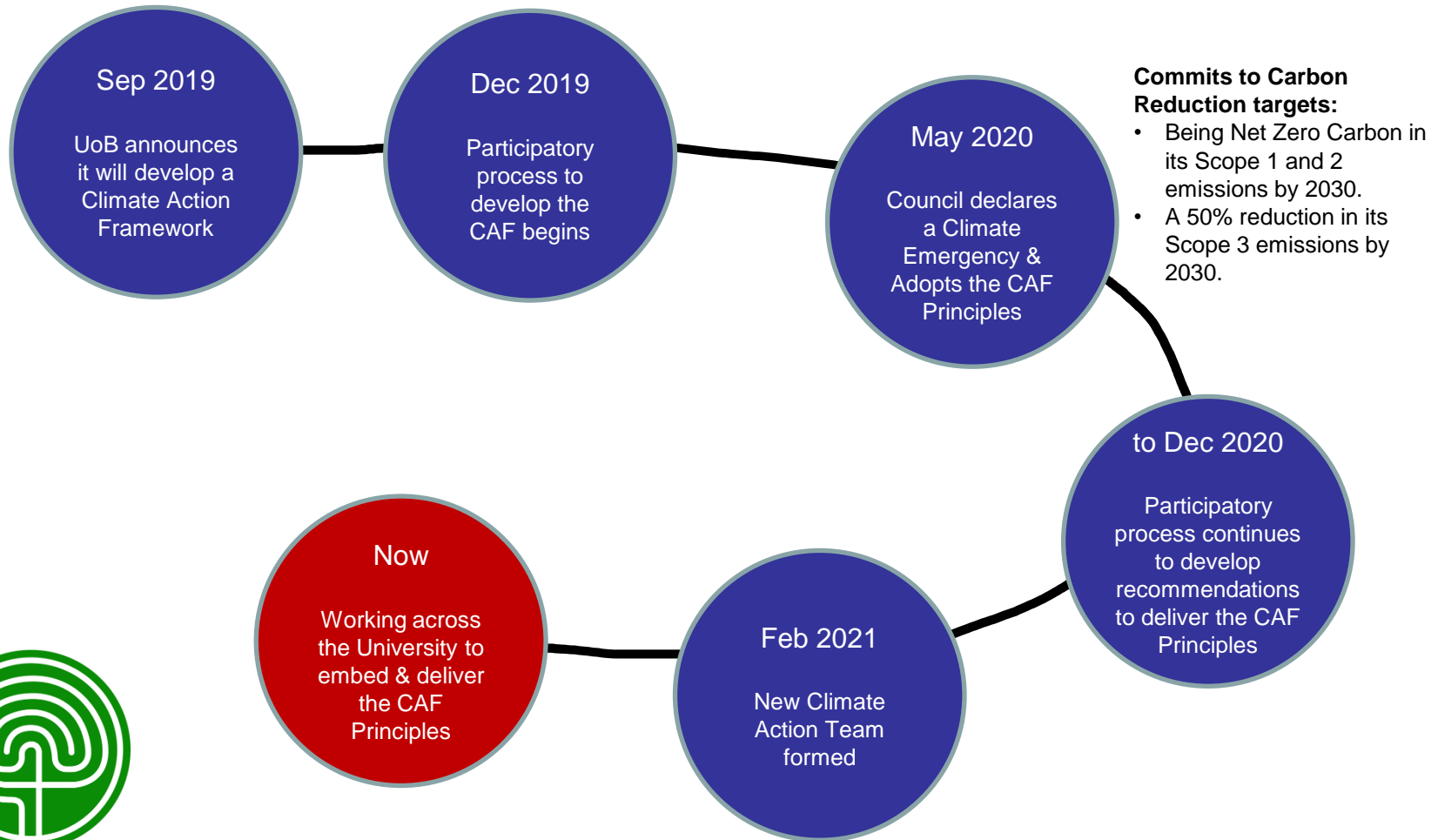
‘**A University though is uniquely well-placed** to navigate this labyrinth. The application of our **collective mind**, our analytical and objective thought leading to **evidence-based decisions** are central to Science and University practice. Our collective **thought leadership** can be a beacon for other Universities, organisations and governments around the World cementing our place as a thought leading institution.

It is this approach, and **working together as a community**, that will allow us to meet the greatest challenge we have faced.’



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Responding to the challenge of climate change



Climate Action Principles



RESEARCH AND INNOVATION

- Supporting world-class research activities at the University of Bath, and in wider collaborations, to deliver impactful research and innovation supporting the transition to the net zero carbon economy.

LEARNING AND TEACHING

- Developing educational initiatives to build a world class reputation for high quality education on climate related issues with global reach and scale, for example by: providing opportunities for every student to study and work on climate related issues; delivering programmes with a sustainability agenda; delivering pedagogically innovative teaching practices to reduce carbon emissions.

INTERNATIONALISATION STRATEGY

- Supporting and encouraging carbon responsible international engagement to ensure sustainable collaborations that meet our strategic internationalisation goals.

CARBON EMISSIONS REDUCTION

- Being Net Zero Carbon in its Scope 1 and 2 emissions by 2030.
- A 50% reduction in its Scope 3 emissions by 2030.
- Being Net Zero Carbon in its Scope 1, 2 and 3 emissions by 2040.

UNIVERSITY CAMPUS EMISSIONS REDUCTION AND CLIMATE CHANGE ADAPTATION

- Reducing all university campus carbon emissions, in a manner that is consistent with the broader principles of sustainability and in a Just Transition.
- Understanding and responding to the consequences of climate change adaptation on the campus and the university's supply chain.

CARBON MANAGEMENT

- Improving the data quality relating to the university's carbon emissions, recognising that this is a strategic tool to understand and systematically reduce its carbon footprint.

UNIVERSITY OF BATH: LOCAL LEADER AND PARTNER

- Working with key partners from the local community, industry, public sector bodies and third sector organisations, to support the transition to the net zero carbon economy

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Climate Action Framework Principles

UNIVERSITY COMMUNITY AWARENESS AND ACTION

- Supporting behavioural and cultural changes to enable carbon reduction targets through engagement with the university community

UNIVERSITY STRATEGY

- Supporting the transition to the net zero carbon economy through the university's strategy, sub-strategies and its core decision making, and throughout its core values and its commitments.

UNIVERSITY GOVERNANCE

- Ensuring there is clear leadership and governance for implementation of the Climate Action Framework, with public accountability through transparent disclosure of progress against our principles.

UNIVERSITY FINANCES

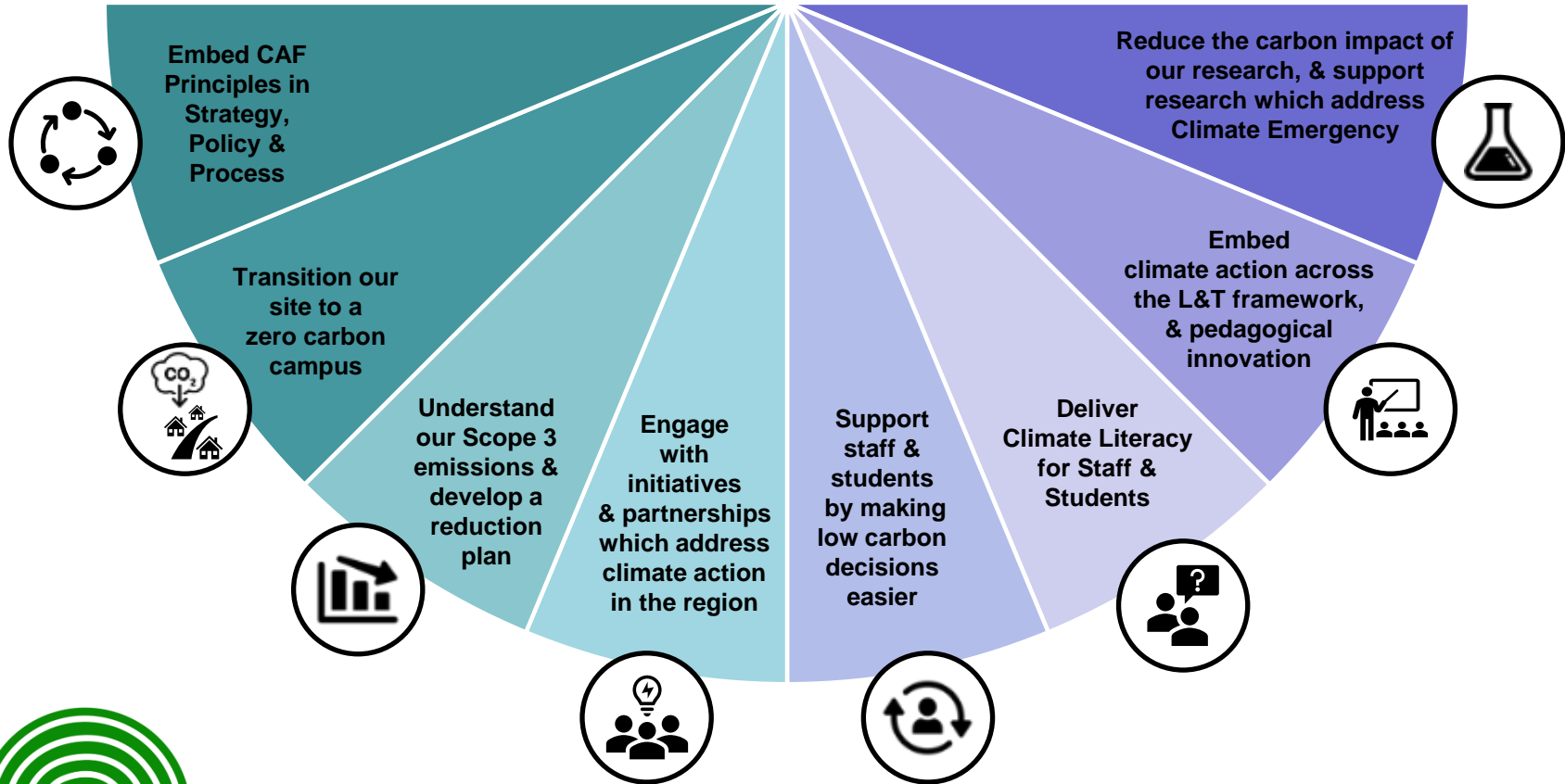
- Taking the principles of the Climate Action Framework into account in all key funding and investment decisions

Whole Institution Approach

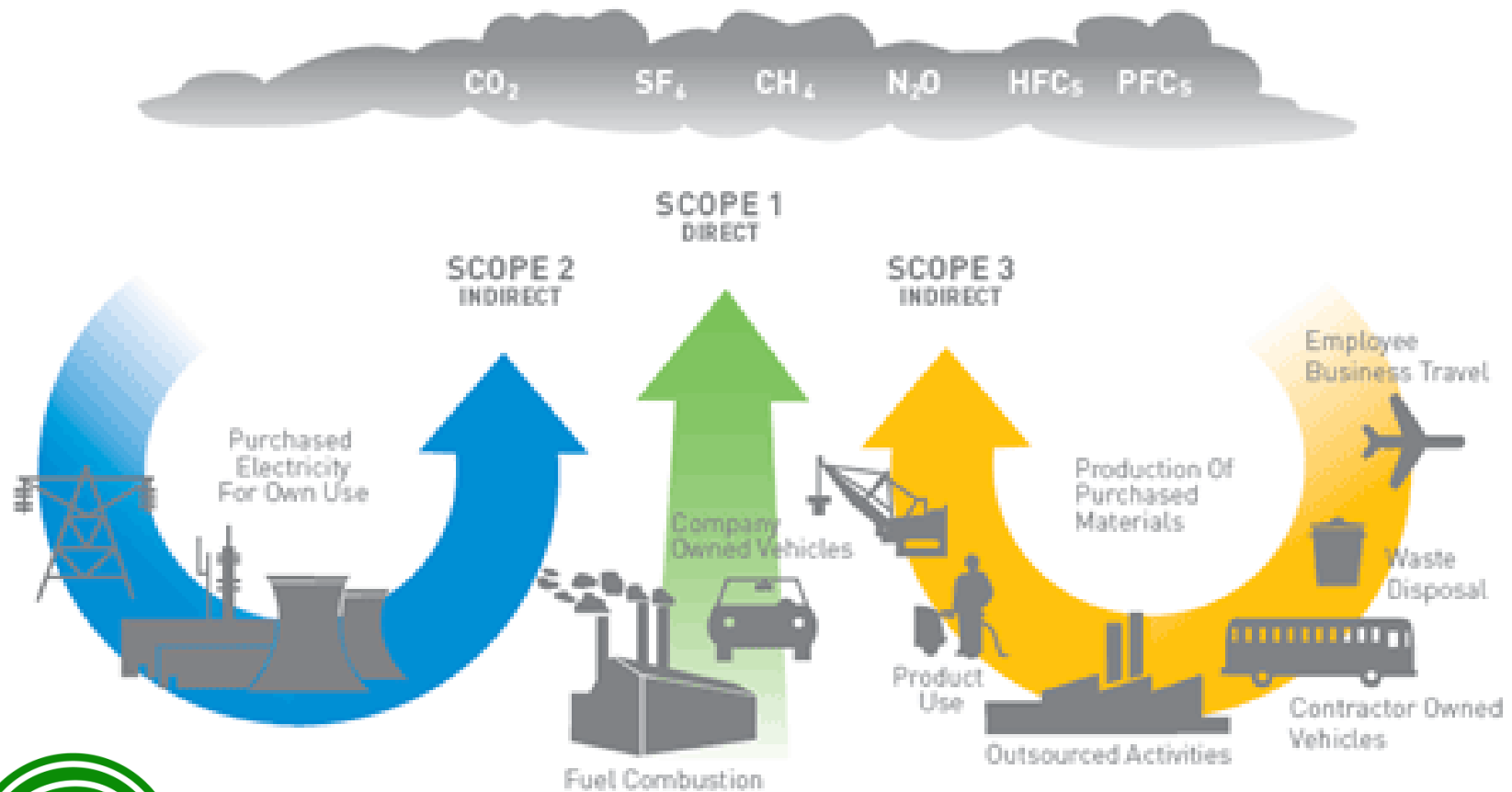


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The Climate Action project will..

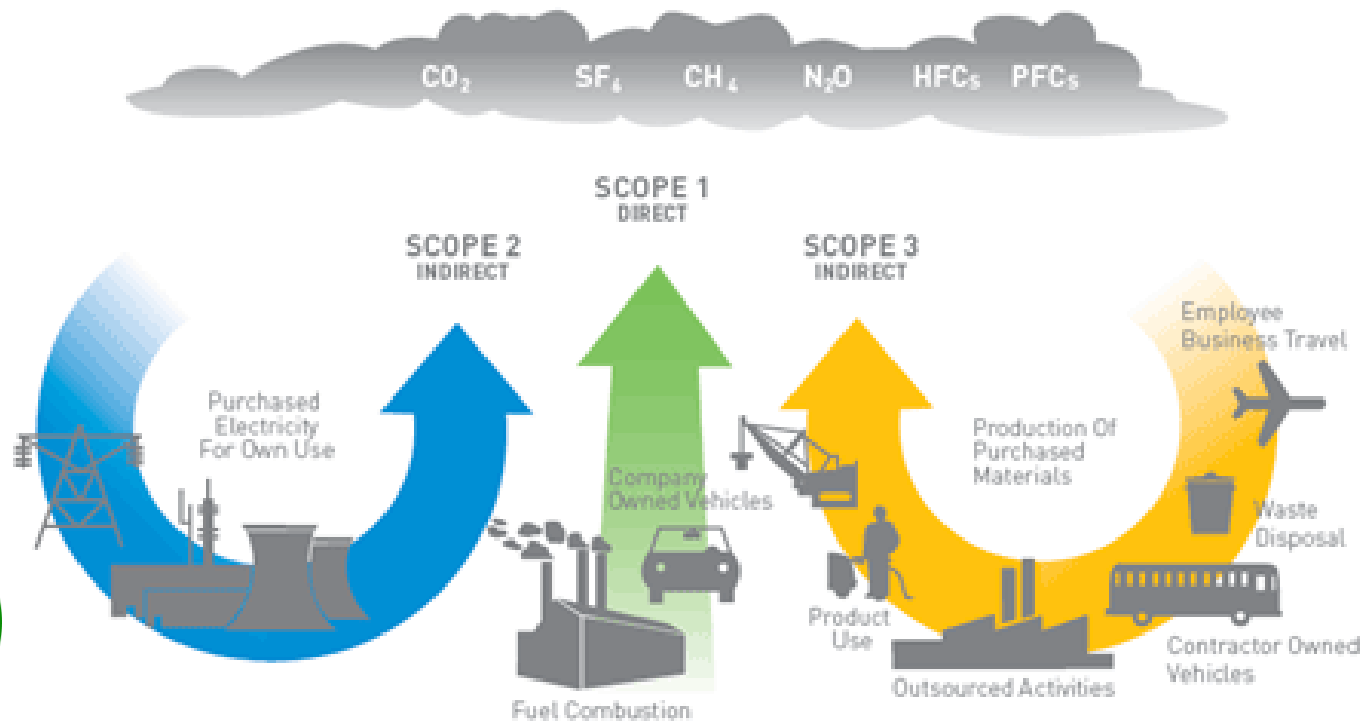


Carbon Footprint



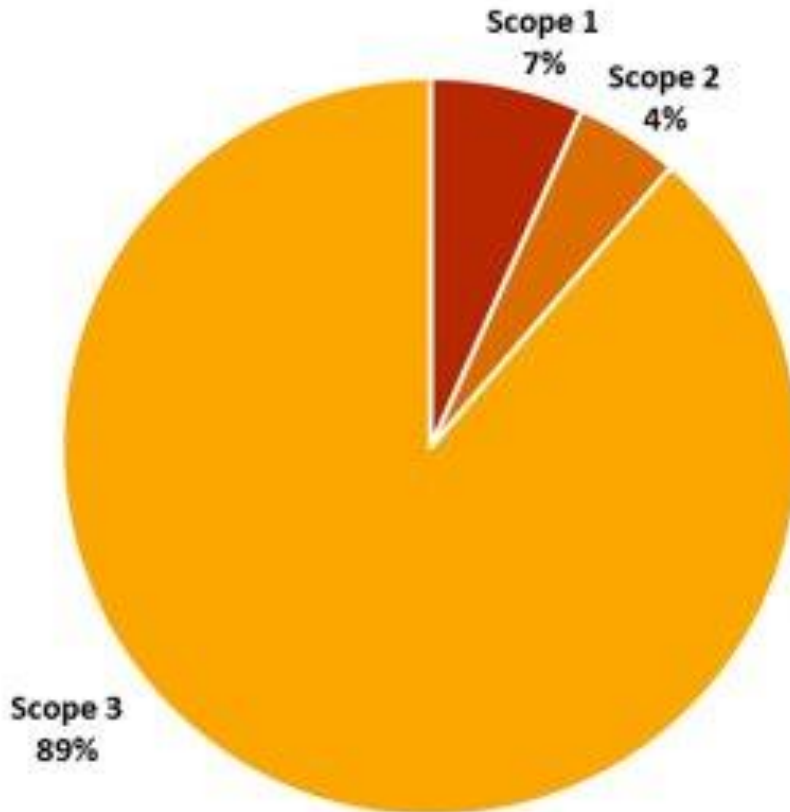
Our Carbon Targets

- Net Zero Scope 1 & 2 by 2030
- Reduce Scope 3 emissions by 50% by 2030
- Net Zero for all by 2040



Our Footprint

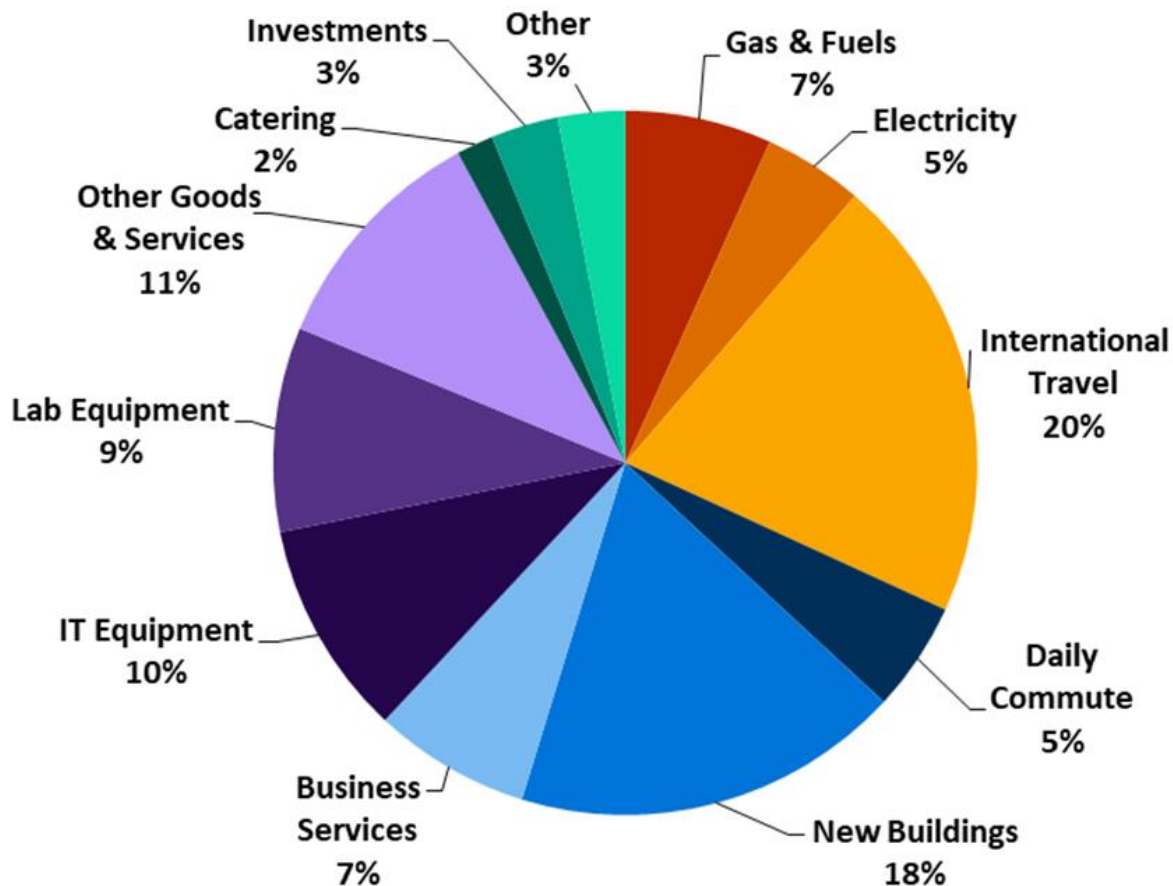
Scope 3 - the largest part of our total footprint



2019-20 total = **116,000** tCO₂e



Footprint



Procurement = Two thirds of total footprint

Energy (scope 1&2) = 12%

Travel = 25%



Build Foundations

- New team and governance
- Policies, strategies, 'embedding in the DNA'
- Project plan

Measure and prioritise

- Footprint – total inc. Scope 3
- Peer review, SWOT, stakeholders, etc

Getting on with it

- Behaviour change – laboratories, students, business travel, staff/student survey
- Footprint – suppliers, buildings decarb plan, food
- Net Zero Carbon Campus Fund
- Learning and Teaching – Climate Literacy for all new students, VIPs, new PG courses
- Communicate!!



What next?

Policy

- Procurement policy
- Business travel policy
- Sustainable Food commitment
- Sustainable transport plan
- Sustainability Policy
- Adaptation Plan
- Investment Policy

Footprint

- New build/retrofit targets
- Campus decarbonisation – study underway
- Scope 3 reduction plan



Behaviour change

- LEAF
(Laboratory Efficiency Assessment Framework)
- Carbon footprint awareness
- Staff Climate Literacy
- Commuting
- Business travel
- Student Climate Leaders
- Student Climate Champions



What next?



Learning & Teaching:

- Curriculum Transformation
- Student climate literacy
- Responsible Futures
- VIPs
- New courses (e.g. MSc Zero Carbon Futures)

Carbon Literacy Project



nus

Responsible Futures

Accredited institution

Research:

- Research Integrity
- Living Labs
- Bath Beacons
- GW4 Climate Alliance



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Research: Bath Beacons

- Future Fuels: Hydrogen and its carriers
- Living Well now and in 2050
- Sustainable and automated transport



Sustainable
& automated
transport



Bath Beacons

Campus Living Lab?

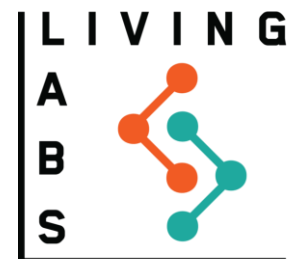


1. We are trying to transition to Net Zero
2. We have academics researching, studying and helping organisations and society transition to Net Zero

Living Labs puts these together:

- We transition **and** study ourselves in the process – full operational + academic collaboration;
- We use this as a **pilot project** to help society transition (individuals, organisations; locally, regionally, nationally and internationally);
- We use this process as a **research and teaching resource**;
- Large-scale, interdisciplinary, ‘whole institutional’ approach;

e.g. campus digital twin, decarbonisation of buildings/transport/supply chain, organisational change, behavioural change, etc



Climate Action Survey

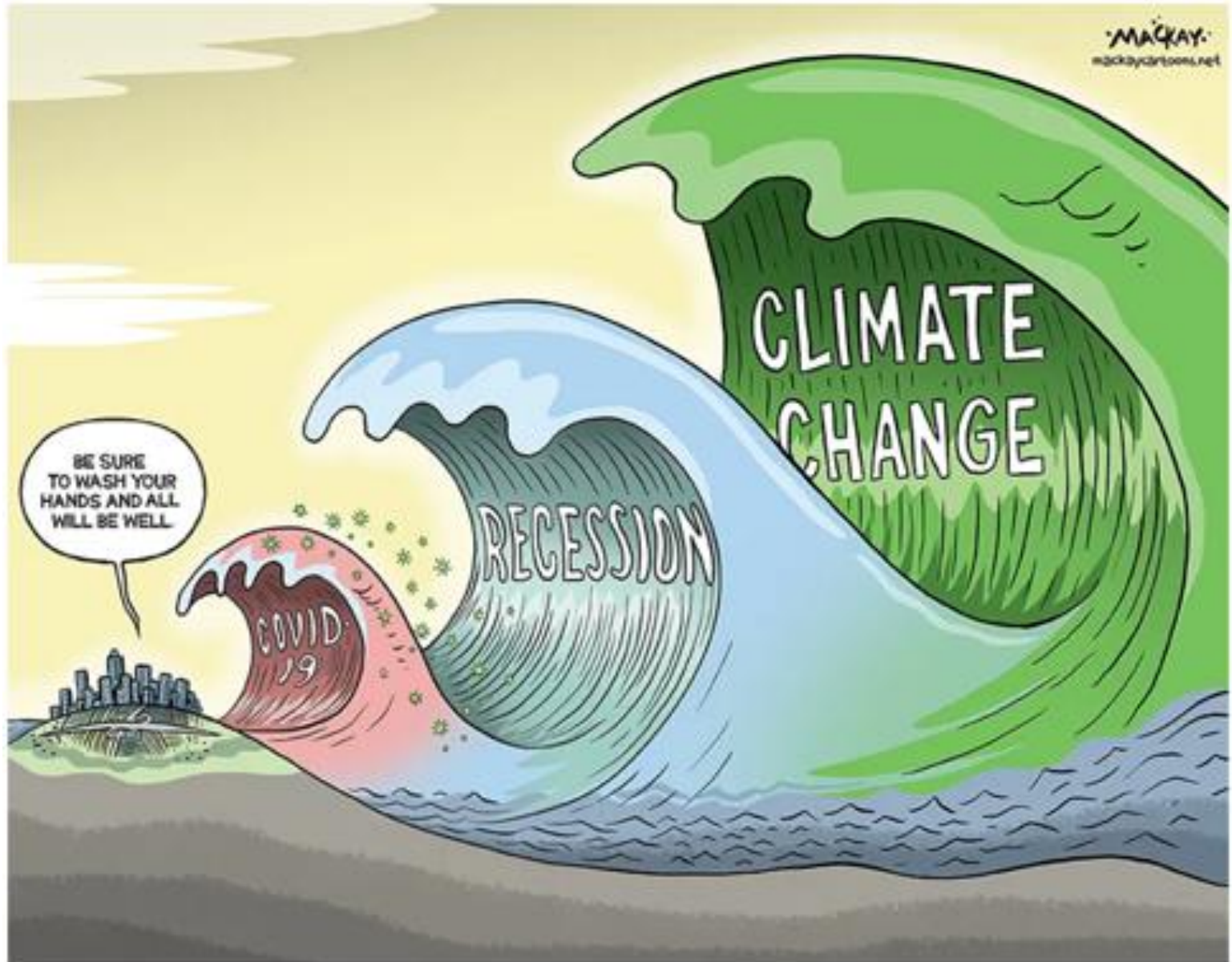


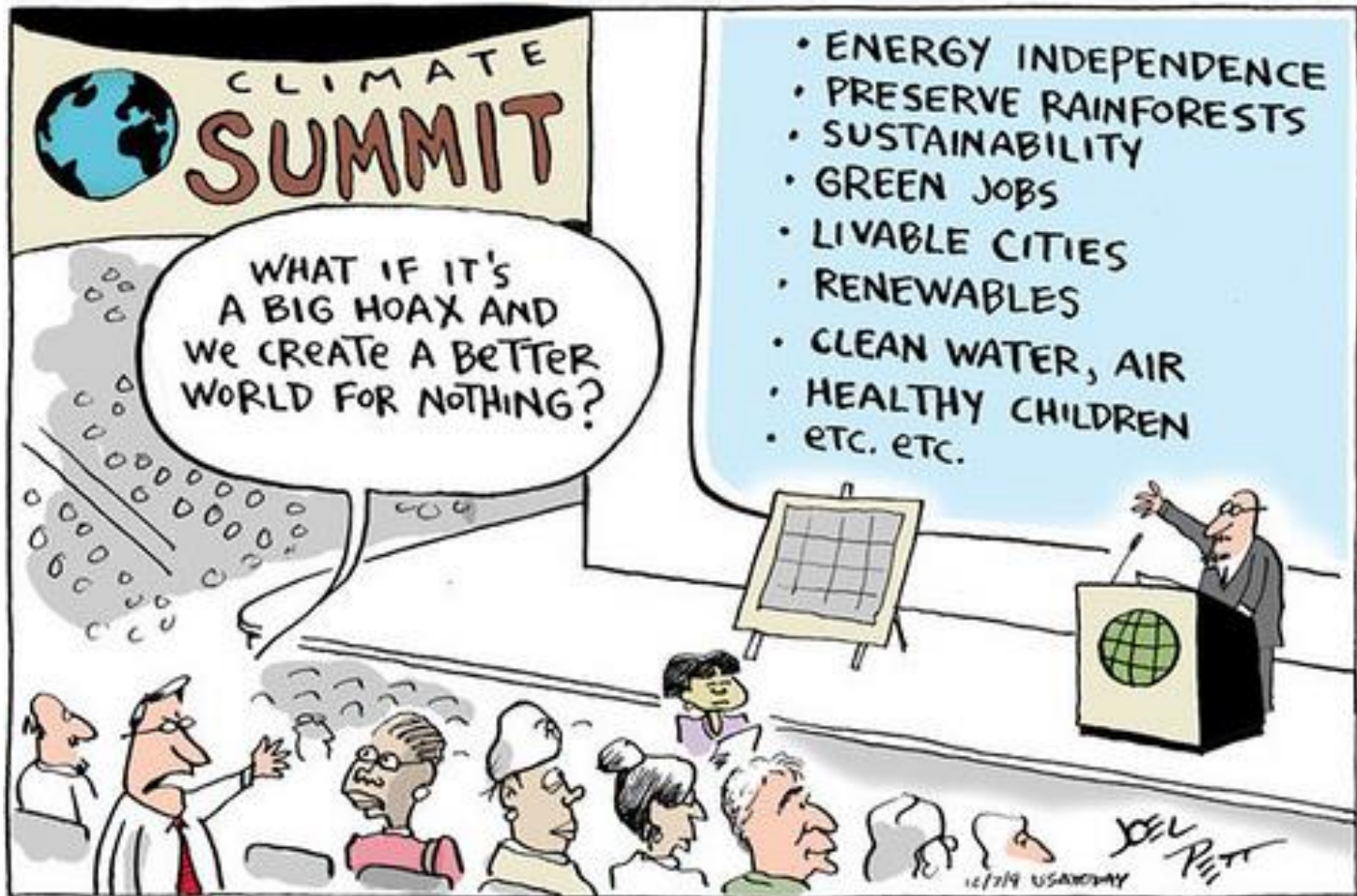
- Have your say on our 2040 Net Zero Carbon goal.
- Survey closes 21st November.
- 3 Airbnb £250 vouchers and other vouchers can be won (restaurants, cinemas and Thermae Bath Spa).



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<https://bit.ly/UoBathClimateSurvey>





Questions?

