

Sustainability at Keele

Professor Zoe Robinson

Professor of Sustainability in Higher Education

Keele University



Global *Sustainability* Institution of the Year

INTERNATIONAL GREEN GOWN AWARDS 2021

A portrait of Sir David Attenborough, an elderly man with white hair, wearing a blue suit jacket, a white shirt, and a blue patterned tie. He is smiling slightly and looking towards the camera. The background is a blurred laboratory setting with people in white lab coats and various pieces of equipment.

“

**This university is
pre-eminent in its
understanding of the
need for sustainability.**

Sir David Attenborough
AT KEELE IN 2019 TO OPEN OUR NEW
£45M SCIENCE LABORATORIES



Pick an image that speaks ‘sustainability’ (or unsustainability) to you. Talk to someone about why you chose that image.



Card resources at – <https://www.keele.ac.uk/listeningproject/>



SUSTAINABLE DEVELOPMENT GOALS

17 GOALS TO TRANSFORM OUR WORLD

1 NO POVERTY

2 ZERO HUNGER

3 GOOD HEALTH AND WELL-BEING

4 QUALITY EDUCATION

5 GENDER EQUALITY

6 CLEAN WATER AND SANITATION

7 AFFORDABLE AND CLEAN ENERGY

8 DECENT WORK AND ECONOMIC GROWTH

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

10 REDUCED INEQUALITIES

11 SUSTAINABLE CITIES AND COMMUNITIES

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

13 CLIMATE ACTION

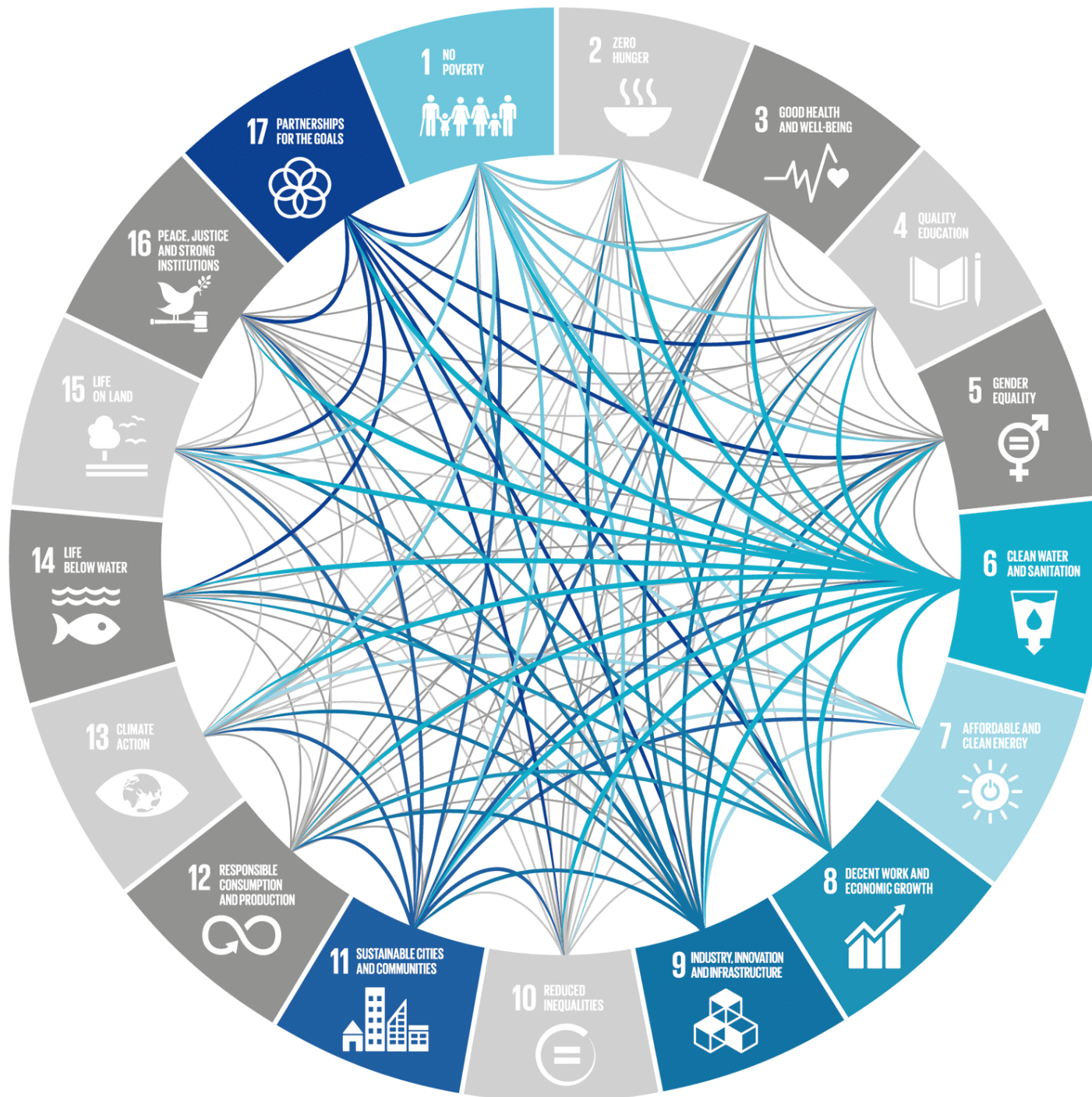
14 LIFE BELOW WATER

15 LIFE ON LAND

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

17 PARTNERSHIPS FOR THE GOALS

SUSTAINABLE DEVELOPMENT GOALS



- Beyond the boundary
- Boundary not quantified

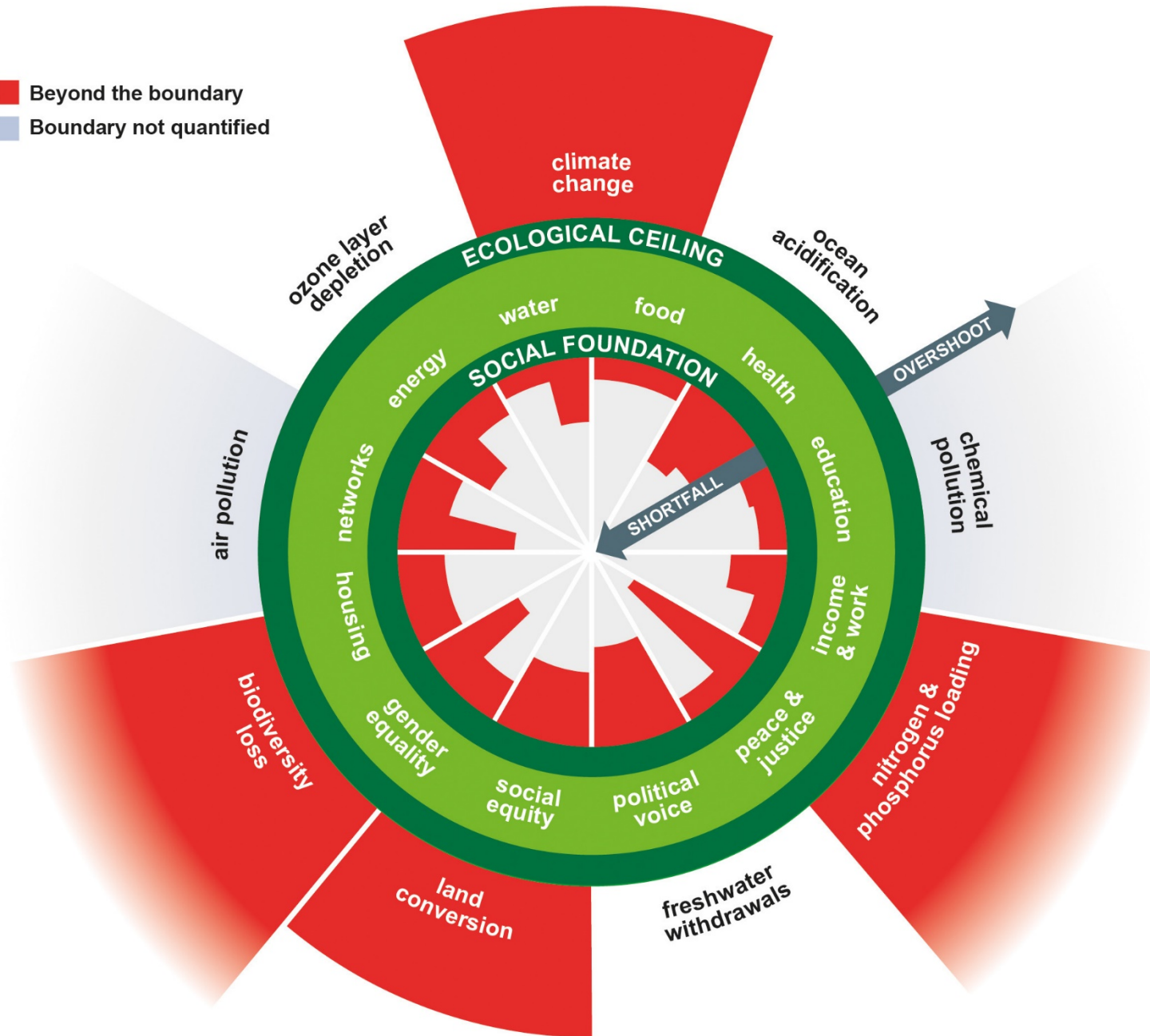


Image: Kate Raworth and Christian Guthrie/The Lancet Planetary Health

News › World

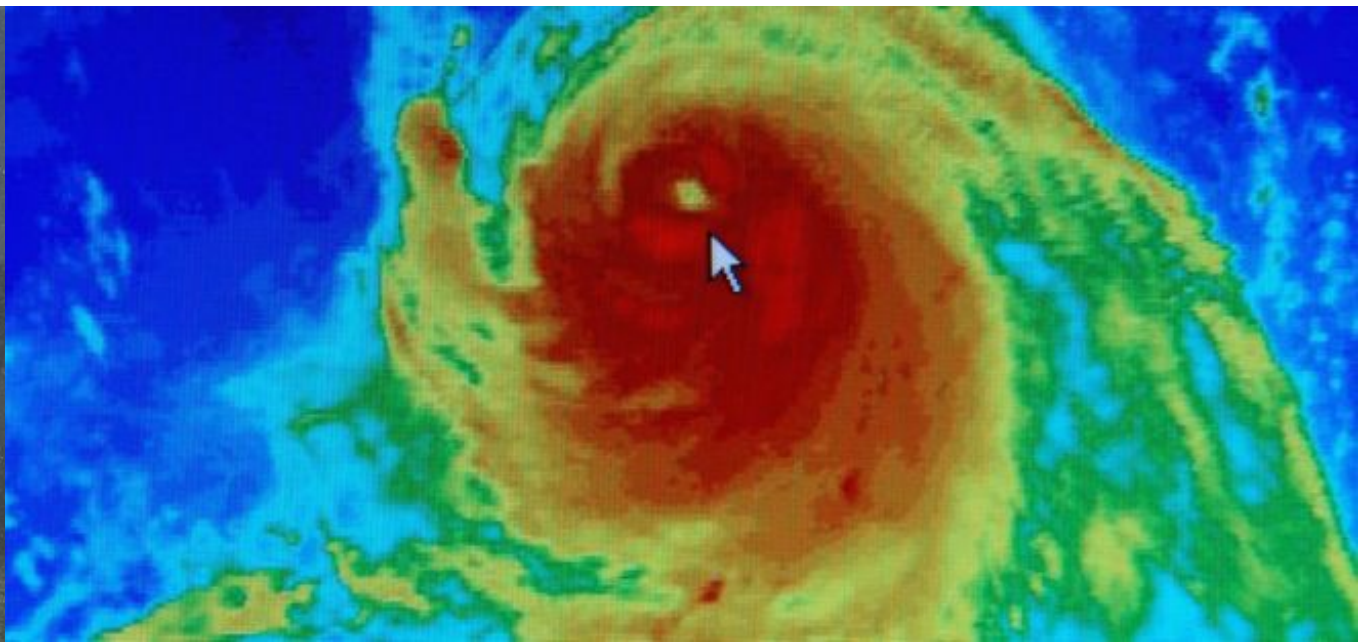
Climate change: It's right to be scared, says top UK scientist

NICHOLAS CECIL Deputy political editor | Monday 16 September 2019 11:38 |  6 comments





Impacts seen at 1°C increase in global average temp.



Our emissions...our legacy



What can universities do?



Research



Education



**Knowledge exchange,
outreach and partnerships**

“Our vision is for universities to be widely recognised as leaders in society’s efforts to achieve sustainability – through the skills and attitudes that students gain and put into practice, through research and knowledge exchange, and through their own business management” HEFCE, 2013/31

November 2013/31

Policy development

Consultation

Responses should be e-mailed by **noon**
on **Friday 7 February 2014**

This document sets out some of the ways higher education can contribute to sustainable development, and proposes an overall framework for how HEFCE will support sustainable development in the higher education sector. It encompasses our earlier policy statements on sustainable development and carbon reduction, and will influence our future funding. We ask for comments from staff at all levels within institutions, and invite students’ views too. We intend that the responses to this consultation will shape our future actions.

Sustainable development
in higher education

Consultation on a framework for
HEFCE

Keele's sustainability journey



Lord Lindsay's vision

A new *kind* of university

"If we are going to try and keep a democratic country and maintain understanding of one another, we have to send out people from our universities who can do the technical stuff and who at the same time have an understanding of political and social problems and of the values that lie behind them".

A commitment to meet the demands of a new kind of society, economy and world



Lord Lindsay, Founder of Keele University





SUSTAINABLE DEVELOPMENT GOALS

1 NO POVERTY

2 ZERO HUNGER

3 GOOD HEALTH AND WELL-BEING

4 QUALITY EDUCATION

5 GENDER EQUALITY

6 CLEAN WATER AND SANITATION

7 AFFORDABLE AND CLEAN ENERGY

8 DECENT WORK AND ECONOMIC GROWTH

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

10 REDUCED INEQUALITIES

11 SUSTAINABLE CITIES AND COMMUNITIES

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

13 CLIMATE ACTION

14 LIFE BELOW WATER

15 LIFE ON LAND

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

17 PARTNERSHIPS FOR THE GOALS

SUSTAINABLE DEVELOPMENT GOALS

Our *green* timeline

**ROOT &
BRANCH**

Embedding
sustainability
in *all* that we do



2008

University Council
agrees to follow a
'Deep Green' path

2010

HEA 'Green
Academy'
Keele in pilot

2011

Sustainability
Hub created

2012

Dedicated 'Dir
of EfS' role and
Sustainability
Project Officer(s)

2015

New University
strategy 'to
promote
sustainability in all
that we do' one of
6 strategic aims

2017

Smart Energy
Network
Demonstrator
and HyDeploy
projects commences

2017

Root & Branch
sustainability
'brand' launched

2018

Outstanding
Leadership Team
of the Year Award

2018

Institute for
Sustainable
Futures
launched

2019

Climate
Emergency
declared

2020

Sustainability
Institution of the
Year Award

2021

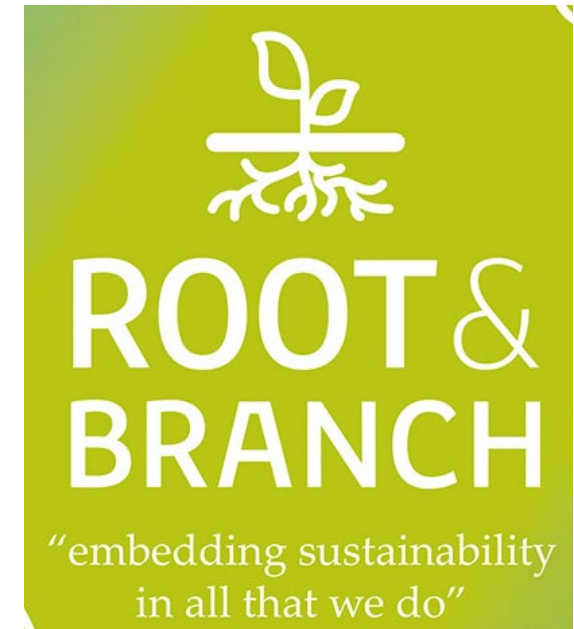
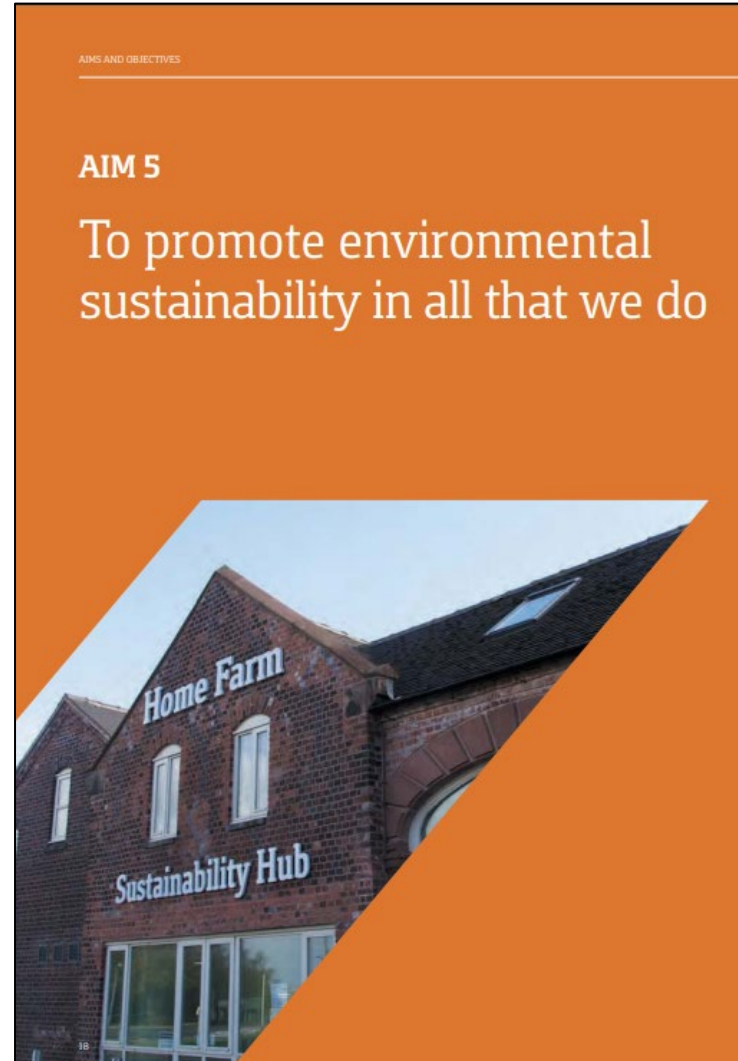
~8MW low carbon
energy generation
build commenced

Our approach

Strategic Aim 5:

“To promote environmental sustainability in all that we do”

- Continue to improve the environmental sustainability of the University through **campus developments**, carbon reduction and the impact of University operations
- Have world-leading **research** in environmental sustainability
- **Educate our students** on environmental issues and provide opportunities for them to put strategies into practice
- Provide **leadership** in application and implementation of environmental sustainability
- Be sector-leading in environmental education and **engagement** with business, external organisations and communities



**Strategy
2015-2020**

THE WINNERS

OUTSTANDING
LEADERSHIP
TEAM OF
THE YEAR
WINNER
Keele University



*Our whole team: A
model of distributed
leadership and
responsibility*



Keele, double award winners





[GGA 2020 - Sustainability Institution of the Year - Keele University - Bing video](#)

Our education



3% of people attend university
but they take up **80%** of the
leadership positions.

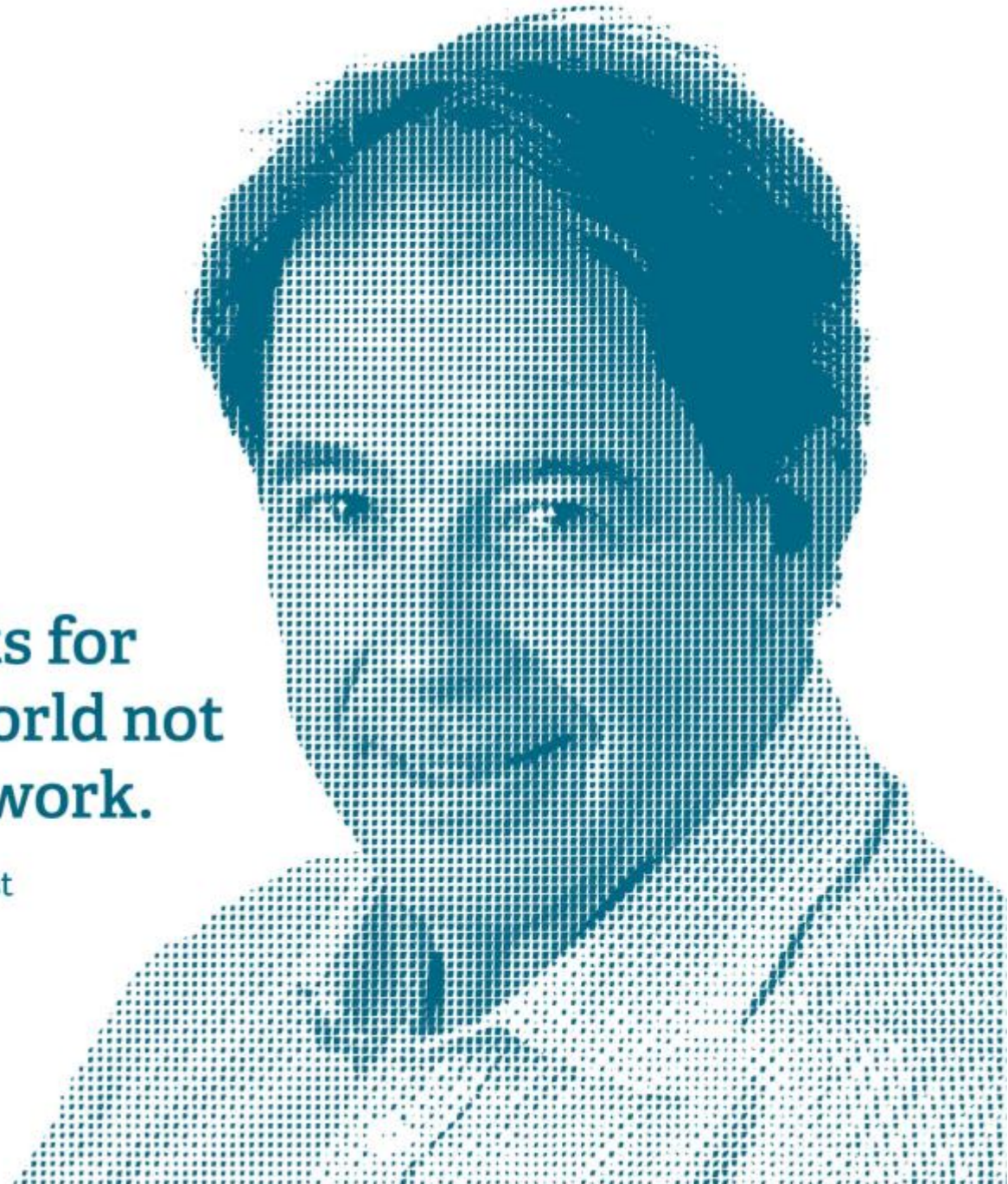
Chuck Hopkins, UNESCO Chair





**Preparing students for
the work of the world not
just the world of work.**

Sir Jonathon Porritt, Environmentalist
Chancellor of Keele University



Degrees

This programme is accredited by the Institution of Environmental Sciences (IES)



ENVIRONMENT AND SUSTAINABILITY

BSc (Hons) or BA (Hons)

[View open days >](#)

Embedding in all disciplines

EDUCATION FOR SUSTAINABILITY MODULE CASE STUDIES

Collated 2018

Highlighting examples of best practice in embedding EfS across the University



Greening Business

An online teaching resource



- Home
- Why study greening business?
- Example course outline & session synopsis
- Group projects
- Useful links & resources
- Help evaluate these resources
- About the Author
- Contact details

Greening Business : an online teaching resource



Elective modules



Co-curriculum opportunities

Our research (& our campus)



Six 'challenges'



Providing clean energy & reducing carbon emissions



Providing food security



Creating responsible, sustainable communities and governance



Creating healthy societies



Communicating sustainability



Protecting air, land, water and ecosystems



- A 'small town'
- Private utilities network
- A 'test bed' for sustainable solutions
- Integrating of research, education, campus, business and the wider community
- 'Untapped human resource'

Dr Zoe Robinson and Dr Ian Madley describe the application of the Living Lab approach at Keele University, to research and develop smart energy strategies and technologies in partnership with the local community, and the importance of making 'invisible' sustainability projects 'visible', in order to maximize educational potential.

Keele University is at the start of a major development which will transform the campus into a 'Living Laboratory' (commonly known as a Living Lab) for experimentation with low carbon energy solutions. Keele University is a 615 acre mixed use campus university, incorporating staff and student housing, sports, catering and entertainment facilities, and academic and commercial uses (Figure 1). As a substantial campus university, Keele operates its own sizeable energy distribution network, giving it control over its own energy infrastructure as well as having total responsibility for its energy and carbon costs. Its size and mixed use makes it analogous to a small town, and an ideal laboratory for researching at-scale low carbon energy solutions, hence these developments will see the entire campus become a living and working environment that is controlled and managed to minimise carbon use – a genuine Living Lab.

Creating a campus-scale laboratory for low carbon energy research

SEND

SMART ENERGY NETWORK DEMONSTRATOR



European Union
European Regional
Development Fund



Funded by
UK Government

EMBEDDING SUSTAINABILITY IN ALL THAT WE DO



- 16 PhD studentships
- **24 3 month MSc projects with SMEs**
- ~240 companies supported in low carbon work
- Create a 'living lab' for research and development by academics and industry

SIEMENS

WE'RE STRIVING TO BE CARBON NEUTRAL BY 2030

Find out more about our new solar and wind farm that will help us generate our own power.

[Find out more >](#)

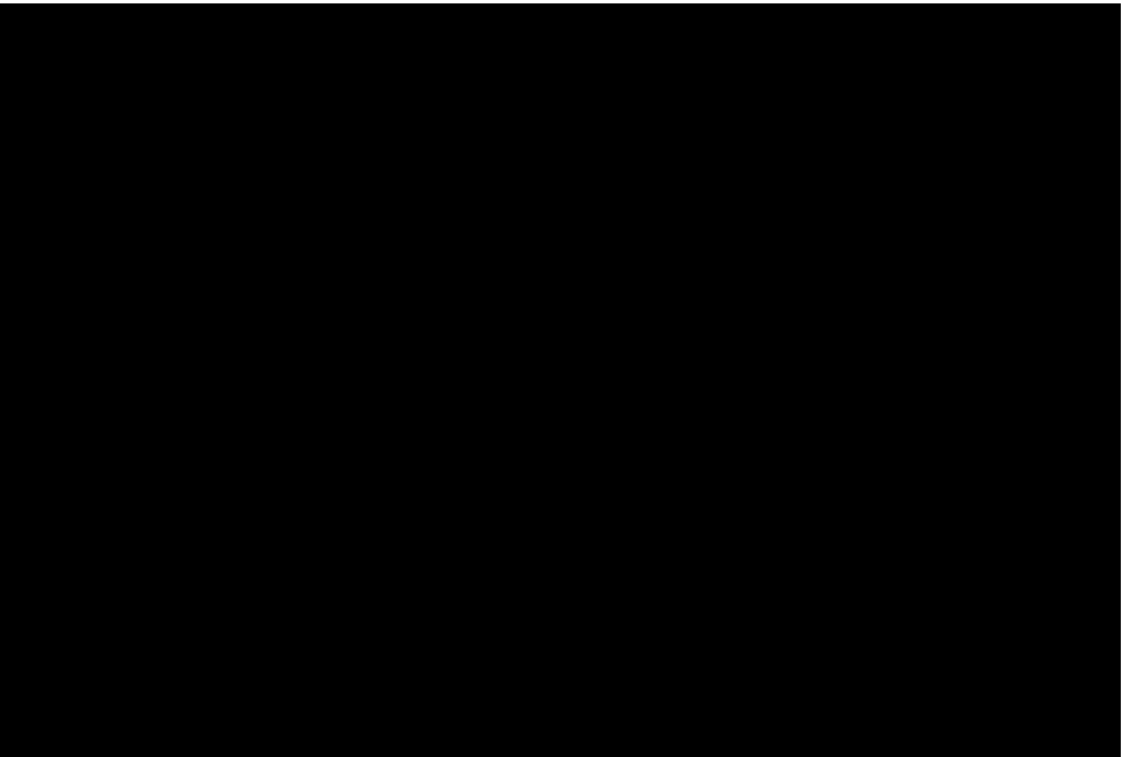
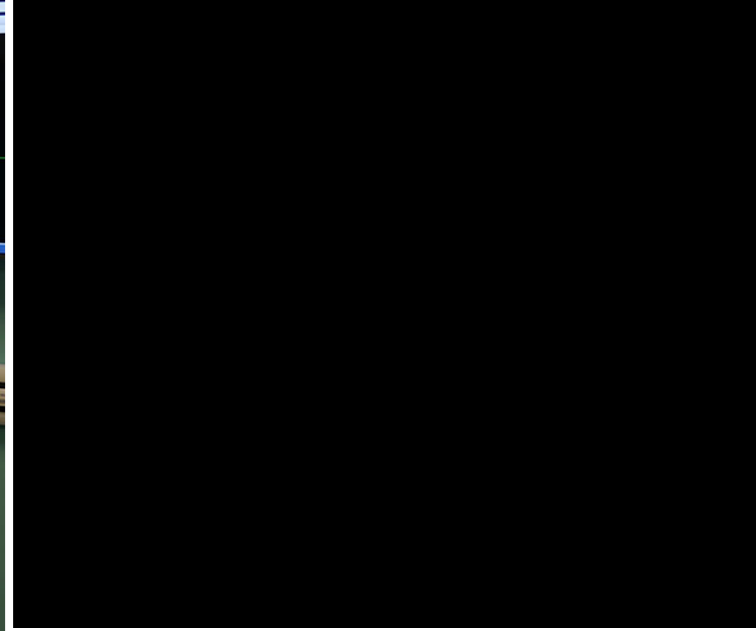


5.5 MW solar farm
1.7 MW wind
1 MW battery storage

~50% campus electricity use

17 SEPTEMBER 2019

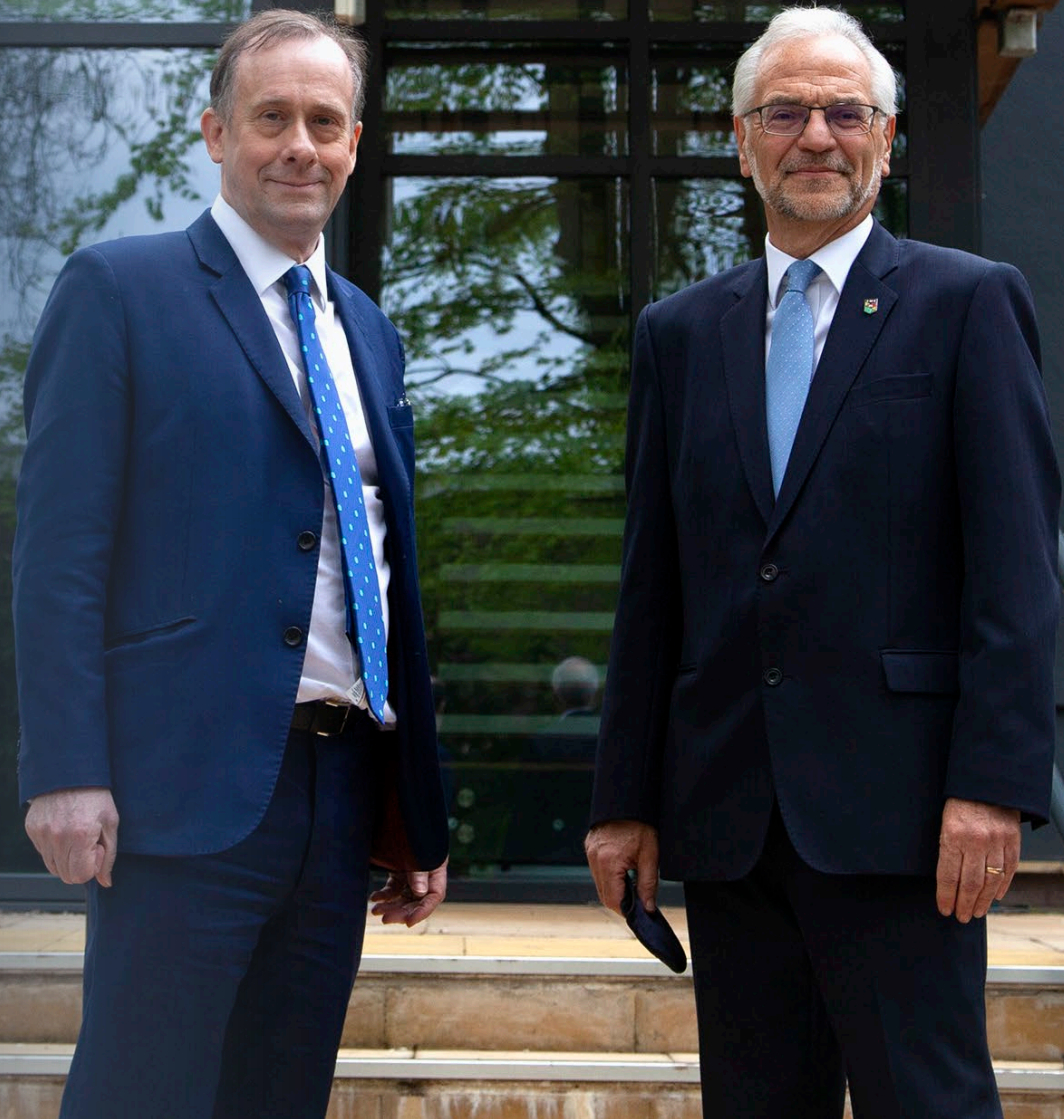
UNIVERSITY INVESTS IN CAMPUS RENEWABLES TO REDUCE CARBON FOOTPRINT



“

**Keele's pioneering
research and expertise
is *leading the way* to a
low carbon future.**

Lord Callanan
MINISTER FOR CLIMATE CHANGE





18 FEBRUARY 2020

KEELE UNIVERSITY ANNOUNCED AS PARTNER TO DEVELOP ZERO CARBON SMART LOCAL ENERGY SYSTEM

Zero Carbon Rugeley

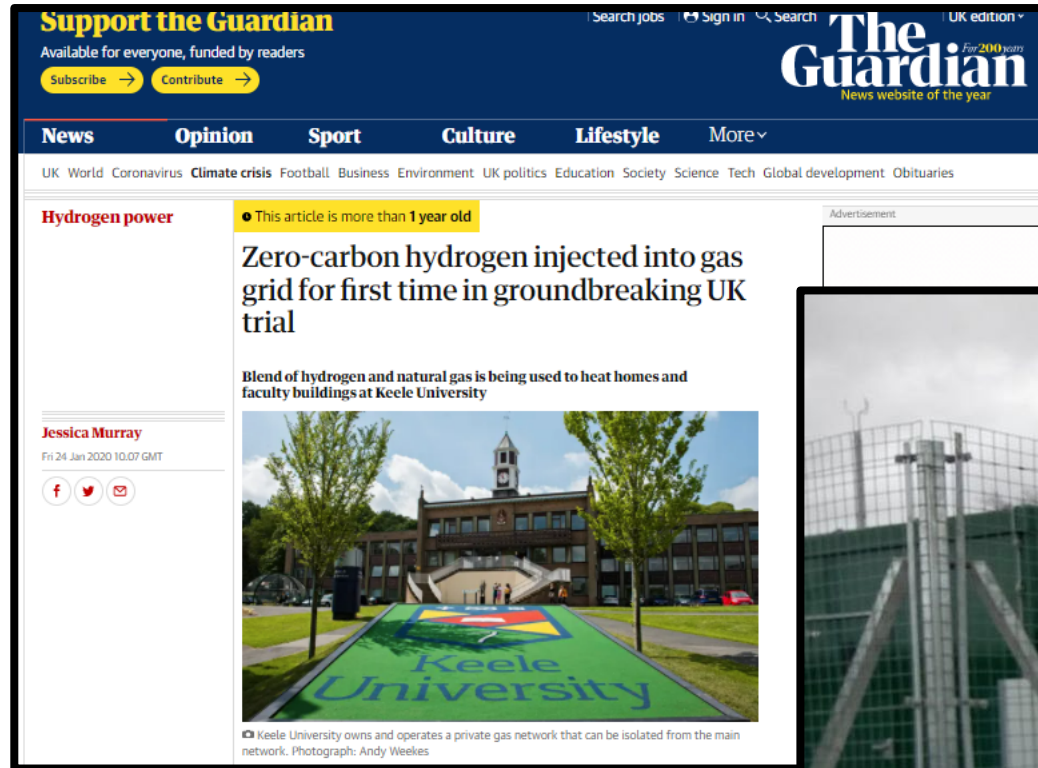


Innovate
UK



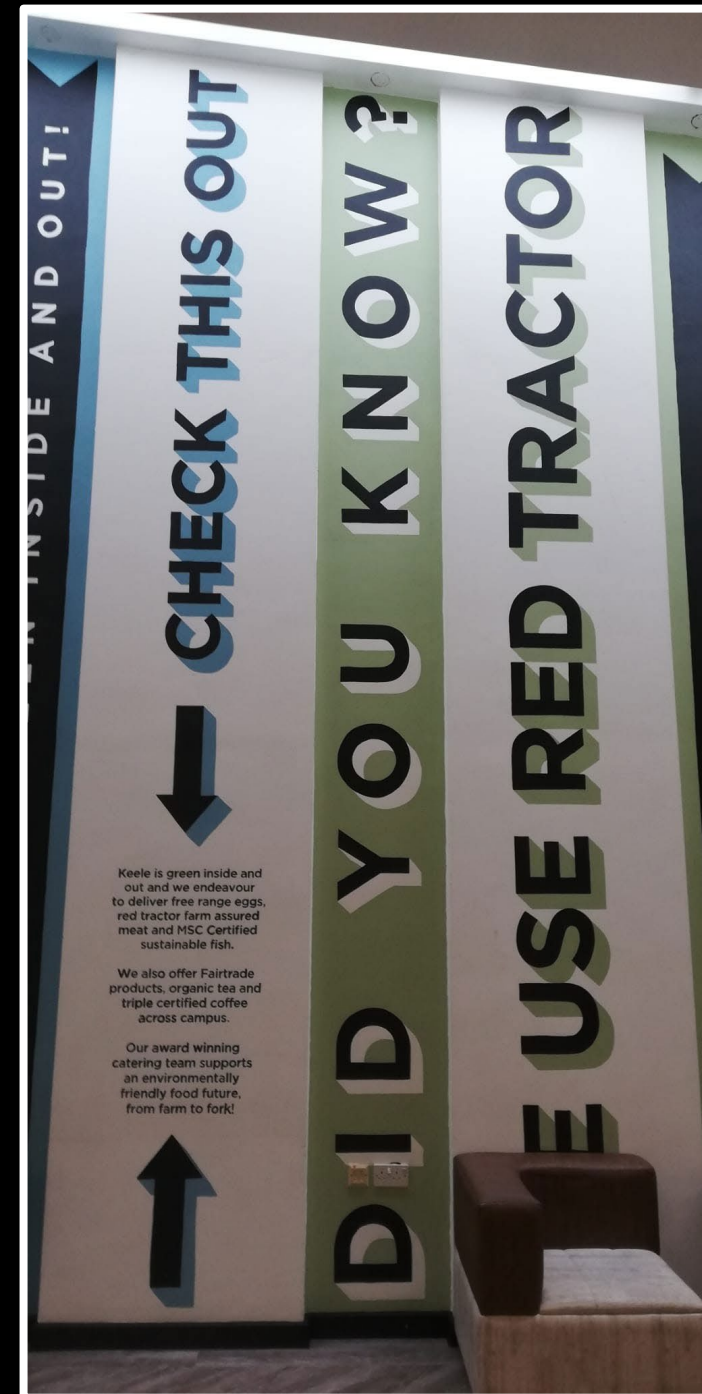
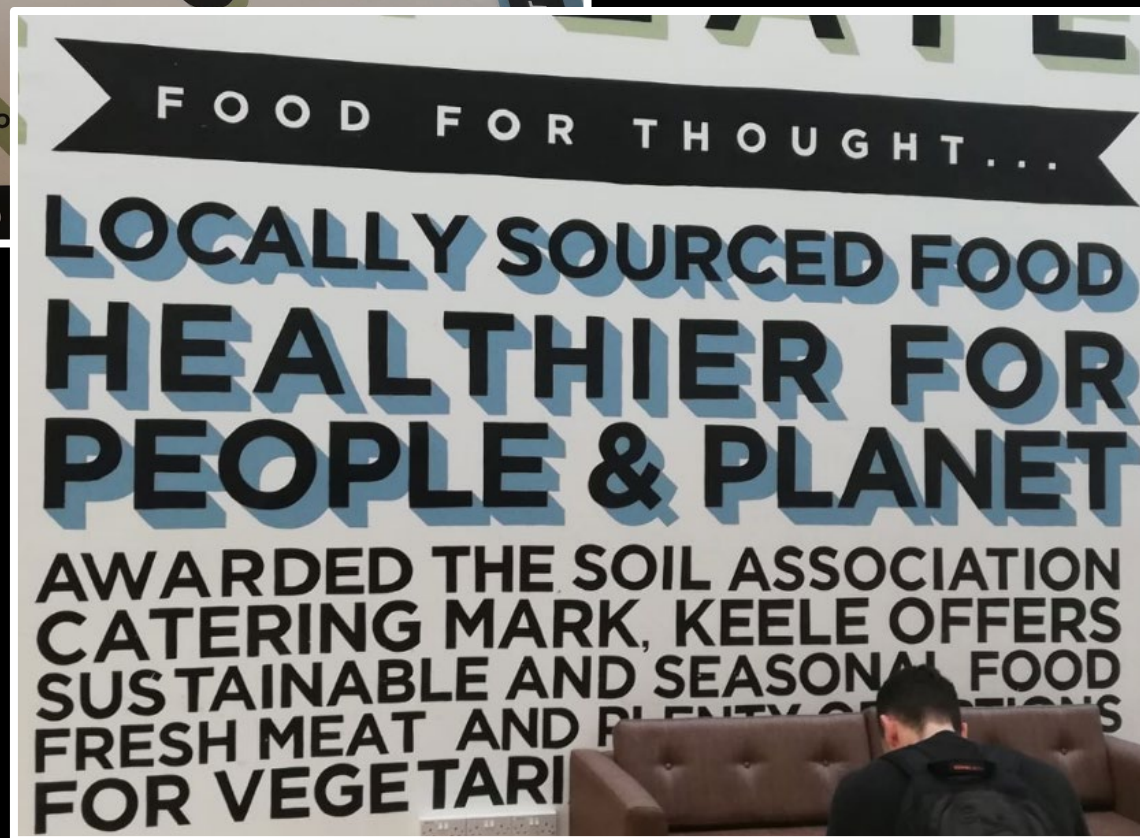
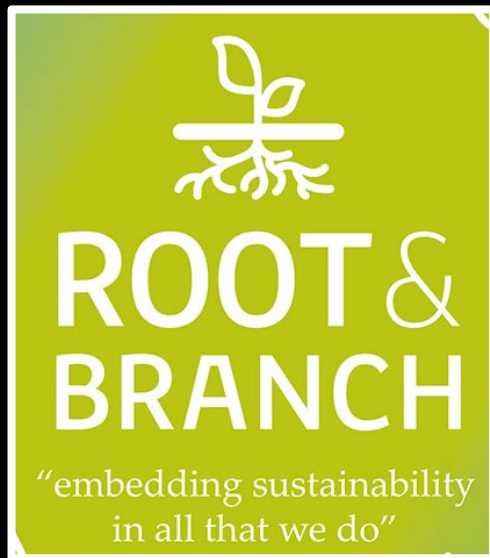


HyDeploy: Enabling Hydrogen Deployment In The UK Gas Grid



Our operations

Communications



Increasing reusables....



EAT, RINSE REPEAT

Bring your Eat, Rinse, Repeat container

AND AVOID THE **25p LEVY**

*not currently available at Mezza bar and SU nights out

Logos: SU, Keele UNIVERSITY, ROOTS BRANCH, nus, Friends of the Earth



Waste free shopping & food growing



03 MAY 2019

KEELE UNIVERSITY DECLARES 'CLIMATE EMERGENCY'

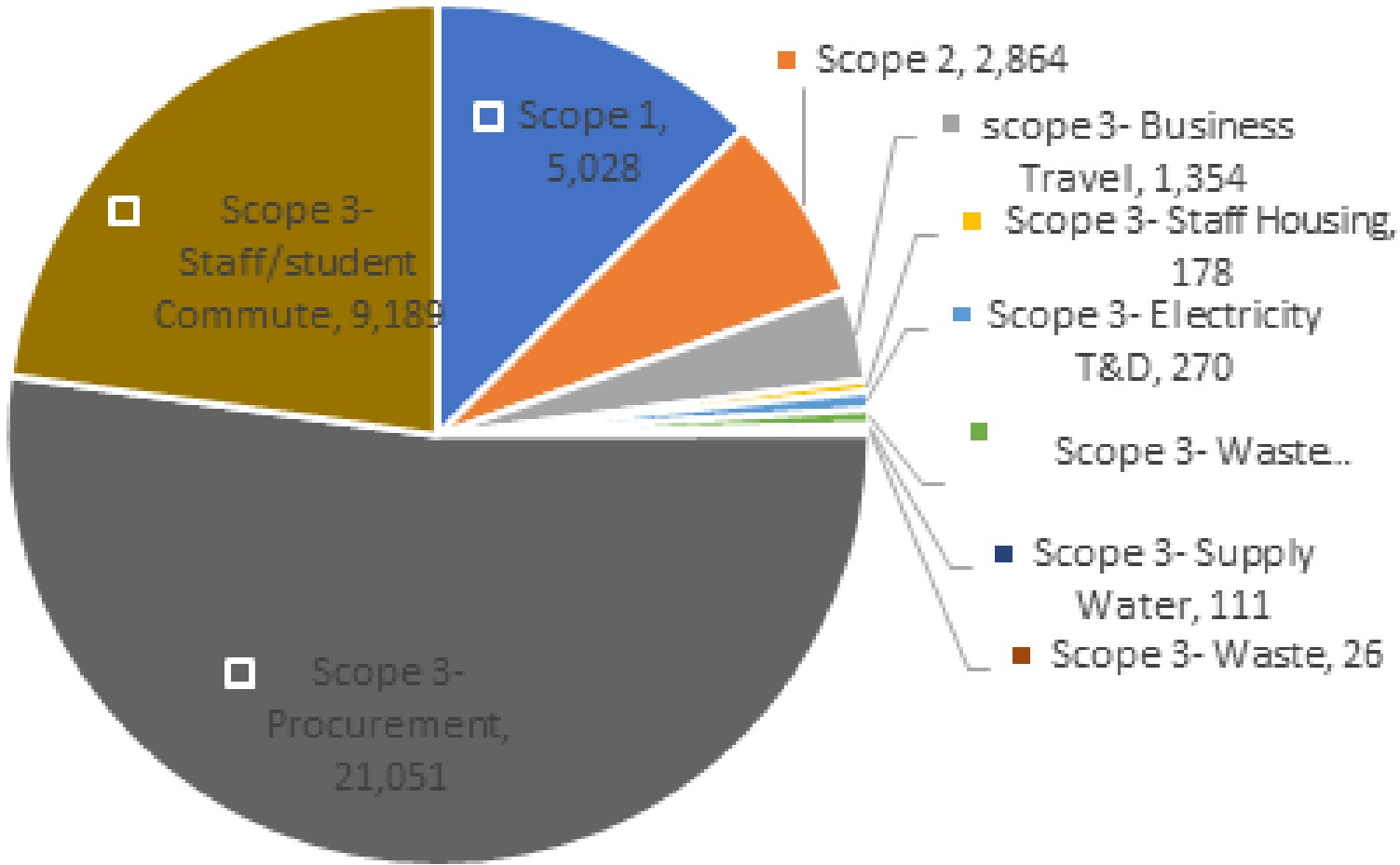
- Climate action principles:
 - Produce
 - Reduce
 - Remove



“Today, I believe that we are on the turning point. I believe that universities like this one, which pays particular attention to sustainability, is right at the cutting edge.”

- Operational C emission reduction
- Research and innovation
- Education and learning
- Strategy and governance
- Finance
- International engagement
- Awareness and engagement
- Leadership and advocacy
- C sequestration and storage
- Communications
- Co-benefits and synergies

Keele University 2018/19 carbon footprint (scope 1, 2 and 3) tCO₂e





The Journey

CONTINUES.....



“The science demands it; the evidence is before you; we must start at once; there is no time to lose.” Lord Deben, Chairman of Climate Change Committee



Thank you!

Professor Zoe Robinson
[z.p.robinson@keele.ac.uk](mailto:z.p.robinson@ Keele.ac.uk)
 @zprobinson1