



Ensure access to affordable, reliable, sustainable and modern energy



Improving the energy efficiency of UCL's buildings

UCL has set challenging targets for improving energy efficiency in its new and existing buildings, as part of its institutional commitment to being a net-zero carbon university by 2030.

The design of the newly built UCL Student Centre is based on highly efficient building fabric. The exposed concrete used in the building helps regulate the temperature by slowly absorbing and releasing heat.

The ongoing renewal and maintenance of UCL's estate is also providing opportunities to embrace energy-saving alternatives. The university has insulated roofs, replaced boilers with more efficient models, installed double-glazing and replaced inefficient lighting with new LED technology in several larger buildings.

UCL has also connected its room booking system with the heating control system to ensure rooms are only heated when they are in use.

Where feasible, UCL is also incorporating on-site low- or zero-carbon energy technologies such as solar panels and heat pumps across its campus, reducing its use of carbon-generating sources.



How environmental policies interacts with international trade

A research-led, interactive module in UCL Laws equips students with advanced knowledge and critical understanding of the increasingly complex interaction between international trade and environmental protection.

The LLM Law and Policy of International Trade and the Environment is centred on problem-based learning and gives students the opportunity to explore 'real-world' case-studies of prominent environmental measures or principles and their relationship with World Trade Organization disciplines.

Most of the trade-environment interface examined in the module relates to climate change mitigation (for example, border carbon adjustments and promotion of climate-friendly renewable energy). It also considers other global environmental concerns, such as biodiversity conservation, fair and equitable benefit-sharing, and the fight against unsustainable fishing practices.



Generating electricity in a London community garden

A cross-disciplinary UCL team is working with the Calthorpe Community Garden in Kings Cross, London, to test the use of plant microbial fuel cells (MFCs) to produce electricity without a generator. ▶

“We aim to further develop the prototype to provide a simple way to integrate bioelectrical systems into cityscapes such as green roof areas and vertical gardens.”

**Dr Luiza Campos
(UCL CEGE)**



◀ The prototype includes 470 individual fuel cells stacked in drawers at the back (320 units) and 150 plant MFCs at the front that help reduce the organic matter content in the diluted digestate and create a vertical garden.

“We aim to further develop the prototype to provide a simple way to integrate bioelectrical systems into cityscapes such as green roof areas and vertical gardens,” explains Dr Luiza Campos (UCL Civil, Environmental & Geomatic Engineering, CEGE).



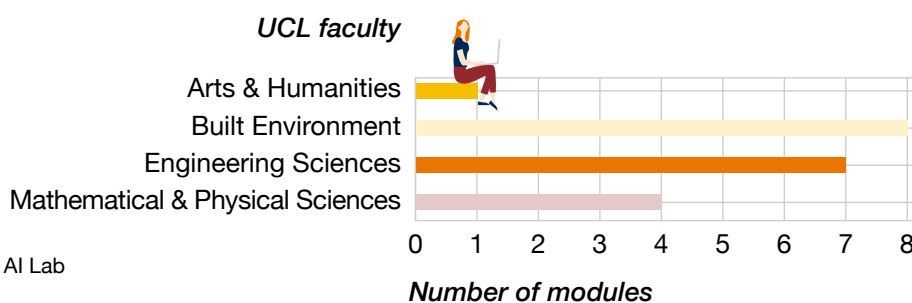
Meeting the energy needs of those living ‘off-grid’ in Colombia

Since 2015, Dr Julia Tomei (UCL Institute for Sustainable Resources) and colleagues have been working with universities in Colombia to understand the energy opportunities and challenges for communities living ‘off-grid’ in Chocó, a coastal region.

In Colombia, 98% of the population now have access to electricity. But providing access to the remaining 2% – 1.4 million people living mainly in poor rural areas – remains a challenge. ▶

Taught modules at UCL supporting SDG7 in 2021–22

Source: PPMI, a partner in the UN AI Lab – more details in the [methodology](#)



646

SDG7-related policy citations in 2016–20

Source: Overton – see [methodology](#)

◀ Typically, demand for electricity is low in these communities, which makes it difficult to attract private-sector investment. The group’s studies show that if electricity is to provide the multiple development benefits on offer, it needs to be delivered as part of wider development programmes that place the needs of local communities at the centre.



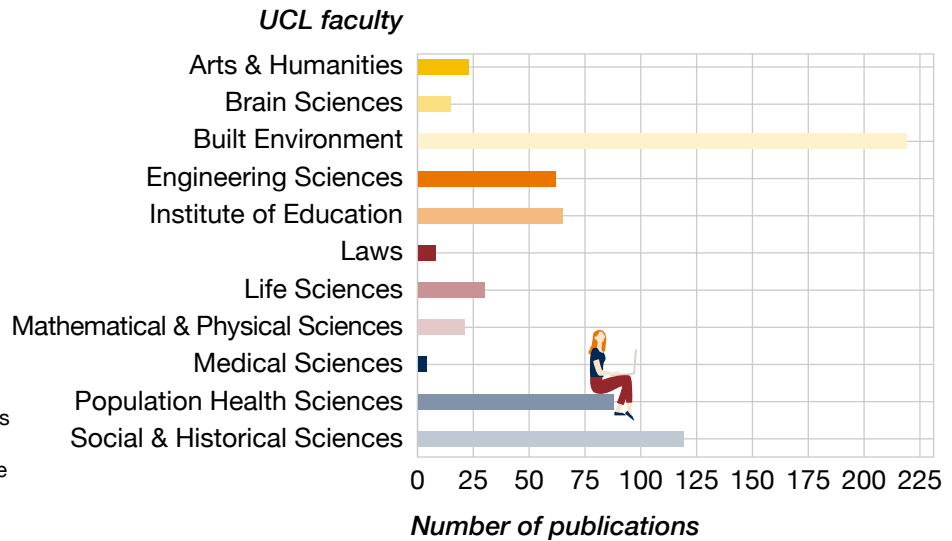
Harnessing the sun to power UCL

UCL has installed solar panel arrays on several of its residential and academic buildings, most recently on the Institute of Archaeology, Langton Close student residences and Student Centre (pictured), helping it to achieve its goal of having net-zero-carbon buildings by 2024 and being a net-zero-carbon institution by 2030.



Number of UCL’s research publications supporting SDG7 by faculty in 2016–20

Graph based on keywords searches of publication databases using a set of SDG keywords developed by Elsevier. Read more about the methodology used on the [SDGs Initiative website](#)



18.8%

of UCL’s SDG7-related publications are in the top 10% most cited for all research of similar papers in 2016–20

Source: Scopus and Clarivate – see [methodology](#)

46.7%

of UCL’s SDG7-related research publications are international collaborations, 2016–20

Source: Scopus and Clarivate – see [methodology](#)

DISCOVER MORE

Read more on these activities and other examples of how UCL is helping to achieve SDG7 are on the [UCL SDGs Initiative website](#).