7 AFFORDABLE AND CLEAN ENERGY

SDG 07

Ensure access to affordable, reliable, sustainable and modern energy for all

Courses **8**

Researchers **9**

Research Outputs **140**
FWCI:2.75

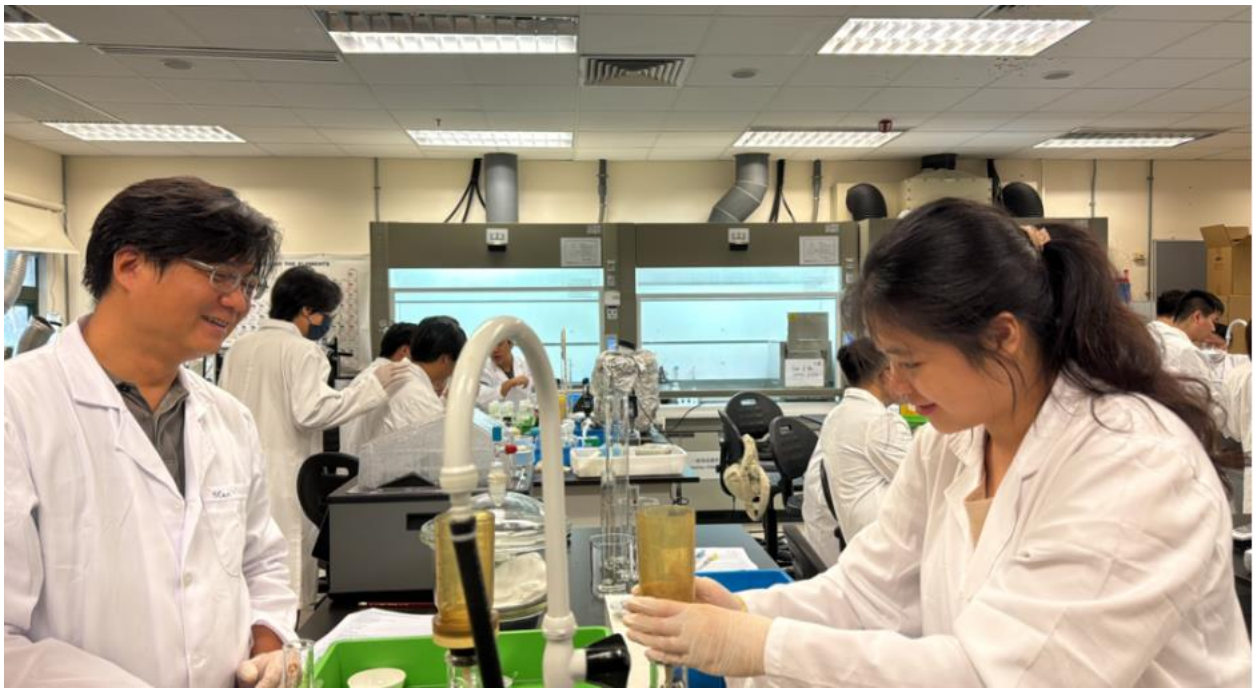
Outreach **3** events
756 participants

The Education University of Hong Kong is dedicated to ensuring access to affordable, reliable, sustainable, and modern energy. Through a multi-faceted strategy that encompasses on-campus renewable energy generation, comprehensive energy-saving measures, and impactful research, the University is actively reducing its carbon footprint and promoting a culture of energy conservation.

Cultivating Environmental Leaders Through Interdisciplinary Science Education

The University is committed to equipping students with the scientific knowledge and practical skills required to address complex environmental issues. A key component of this is the **Minor in Science for Environmental Management**, a programme that champions interdisciplinary learning by integrating core scientific principles with contemporary management practices. This programme directly supports the United Nations' Sustainable Development Goals by fostering an understanding of responsible resource use, renewable energy, and environmental stewardship.

The curriculum is designed to prepare students to contribute meaningfully to sustainability through a blend of hands-on laboratory work, immersive fieldwork, and in-depth case studies of pressing environmental challenges. Furthermore, it encourages interdisciplinary projects that bridge the gap between science and policy, empowering students to develop holistic and effective solutions. By nurturing this deep, practical understanding of environmental science, EdUHK is preparing a new generation of professionals to lead and innovate in the field of sustainability.



Driving Sustainable Urban Futures

Pioneering research from scholars at EdUHK is providing critical insights into the drivers of urban carbon emissions, offering a scientific foundation for creating more sustainable cities. A recent study examining the period from 2011 to 2021 analysed the spatial patterns and underlying causes of carbon emissions from residential buildings in the major city of Fuzhou, China.

The research reveals that residential carbon emissions are highly concentrated in the city centre and its surrounding districts, with emission levels gradually decreasing towards peripheral areas. This distinct radial pattern highlights the significant impact that urban density and the structure of development have on energy consumption and emission levels.

Using sophisticated spatial analysis with ArcGIS and the STIRPAT model to identify key drivers, the study determined that economic and demographic factors are crucial in influencing emissions. Specifically, increases in GDP per capita, the rate of urbanisation, and the resident population were all associated with higher emissions. The analysis quantified this relationship, finding that a 1% rise in GDP per capita led to a 0.66% increase in residential carbon emissions, underscoring the strong link between economic growth and environmental impact in the urban residential sector.

This research provides an essential evidence base for policymakers to develop targeted strategies aimed at reducing emissions and promoting energy efficiency in residential buildings. By understanding both the spatial distribution and the principal drivers of carbon emissions, decision-makers can formulate more effective, district-specific reduction targets. The insights from this EdUHK-supported study serve as a valuable reference for other developing cities striving to balance economic growth with sustainable urban development, thereby contributing to regional low-carbon initiatives and broader climate change mitigation efforts.

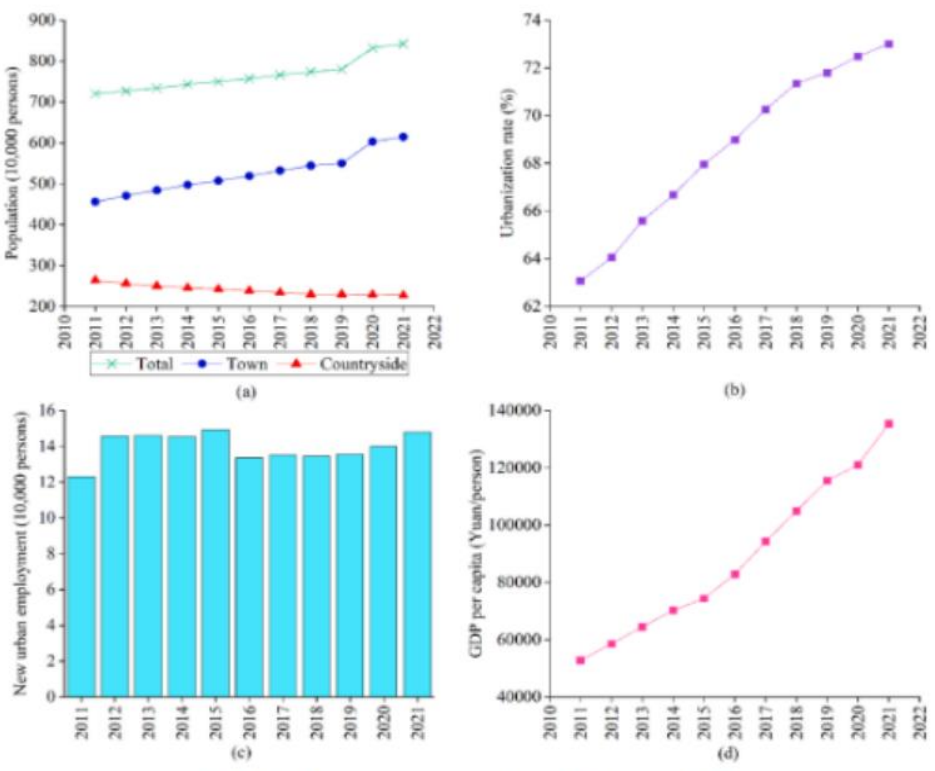


Fig. 6. Trends in important carbon emission drivers of Fuzhou in 2011–2021.

Source: Li, X., Lin, C., Lin, M., & Jim, C. Y. (2024). Drivers and spatial patterns of carbon emissions from residential buildings: An empirical analysis of Fuzhou city (China). *Building and Environment*, *257*, Article 111534

Advancing Sustainable Mobility and Renewable Energy

In line with the University's ongoing commitment to sustainability and carbon reduction, the Estates Office has installed over 150 **electric vehicle (EV) chargers** in the campus car park. This major infrastructure enhancement encourages the campus community to switch to electric vehicles, which emit no tailpipe pollution. By providing convenient and accessible charging facilities, EdUHK aims to support a transition away from fossil fuel-reliant transportation, thereby contributing directly to climate change mitigation efforts. This initiative is consistent with the University's vision of fostering a greener, more sustainable campus and aligns with broader city-wide objectives to reduce urban air pollution and promote sustainable mobility solutions.

Further demonstrating its dedication to carbon emission reduction, EdUHK has extended the application of renewable energy across the campus. The installation of **photovoltaic (PV) panels** on the covered walkway was completed in 2022, a project successfully approved and supported by CLP Power Hong Kong Limited under the Renewable Energy Feed-in Tariff Scheme. Expansion of the PV panels along the covered walkway is currently underway, with completion anticipated in 2025. Through these initiatives, EdUHK continues to advance its sustainable development goals by integrating clean energy solutions into campus infrastructure.

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