

Energy poverty in transitioning cities

Producing novel insights to address urban infrastructural inequality and vulnerability

Domestic energy services such as space heating, light, space cooling, cooking, information technology and appliances are essential for the conduct of everyday life. Energy poverty is understood to occur when a household is unable to secure adequate levels of such services in the home. This may happen for a range of reasons, including affordability – if energy costs are too high in relation to the household's income – or because of the lack of needed infrastructure.

In its various guises, energy poverty affects billions of households worldwide, particularly in less-developed countries where access to modern energy carriers such as electricity is often limited. In more developed countries, a related set of circumstances has come to be termed fuel poverty: a predicament that is widely recognised as a source of winter-time hardship for millions of people, and a driver of multiple health and well-being problems in countries like the United Kingdom, Ireland and France.

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EVALUATE has been advancing the boundaries of knowledge by developing an innovative and comprehensive framework to study energy poverty – a global problem linked to a broad diversity of societal concerns including environmental sustainability and social equity. EVALUATE has established the theoretical envelope and generated an unparalleled amount of scientific knowledge on the subject.

Professor Diana Ürge-Vorsatz

Vice Chair, Working Group III, Intergovernmental Panel on Climate Change (IPCC)

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Energy poverty is an innately urban problem, because cities are primary sites of energy consumption, and focal points for the entanglement of socio-technical infrastructures. Understanding urban energy poverty, therefore, can produce knowledge that is widely applicable

in policy and science. This is one of the main objectives of the Energy Vulnerability and Urban Transitions in Europe (EVALUATE) project – a European Research Council-funded initiative underway since March 2013. It aims to investigate the manner in which urban institutional structures, built tissues and everyday practices shape energy poverty at a variety of geographical scales.

EVALUATE uses a novel conceptual framing – energy vulnerability – to explore how fuel poverty and domestic energy deprivation affect households and communities over prolonged periods of time, and in relation to existing structures of political and economic power. Providing people with the energy services that they need, according to one of the key premises of the project, is just as much a question of ensuring an adequate match between housing types, heating systems and household needs, as it is about incomes and energy efficiency. As such, the project aims to generate a conceptual shift in the mainstream theorisation of energy poverty, away from the present focus on poverty, access and energy efficiency, onto more complex and nuanced issues of household resilience, precariousness and political recognition.

Methods

Alongside theoretical and policy innovations, the EVALUATE project is aimed at advancing the state of the art in energy poverty methodology, by providing the first comprehensive investigation of the numerous social and spatial dimensions of energy poverty in the grain of the city. Central and Eastern European cities are the project's primary research site, due to their unique combination of cold climates, higher-than-average rates of inefficient housing, inadequately developed and/or decaying infrastructure, large income differentials and economic/political restructuring issues.



We have undertaken comparative work in eight urban districts within four such cities: Gdańsk (Poland), Prague (Czech Republic), Budapest (Hungary) and Skopje (Republic of Macedonia).

Household surveys are the cornerstone of the project: 2,435 of them have been collected in the four case study cities, resulting in the compilation of detailed and purpose-built data about domestic warmth, energy expenditure, debts and efficiency. This information has been supplemented with insights from in-depth household interviews, 'energy diaries' and energy efficiency audits in the homes of approximately 160 households living in the same four cities. EVALUATE's juxtaposition of qualitative and quantitative methods provides unprecedented detail about the day-to-day practices related to the lack of energy comfort.

The project has also involved 195 expert interviews in a much wider range of cities across the world, as well as the analysis of micro-data from national and European Union surveys of energy poverty. In addition to determining the

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In one way or another, approximately 10,000 people have been directly involved in EVALUATE activities – as research subjects, interviewees, scholars or decision-makers in receipt of its findings. It is without doubt the largest activity of its kind ever undertaken in the energy poverty domain.

Professor Stefan Bouzarovski

Director, Collaboratory for Urban Resilience and Energy,
member of the Manchester Urban Institute

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Energy Vulnerability and Urban Transitions in Europe



institutional and political forces that drive energy poverty, this set of investigations has allowed for cross-comparing a number of variables that have not been considered jointly in existing scientific and policy papers.

Outcomes

The project has resulted in an extensive array of academic papers, books, blog articles, youtube videos as well as policy briefs (see urban-energy.org/outputs). More than 150 dissemination activities have taken place across the world, including keynote presentations at the opening of 2014 EU Energy Week at the European Parliament in Brussels, the 2015 Beyond Oil Conference in Bergen, and the 2016 Engineers Without Borders Conference in Barcelona. Peer-reviewed publications resulting from EVALUATE are redefining the state of the art in energy vulnerability research. Project papers have persistently topped the list of most downloaded articles in their respective journals. The project team organised a large international conference in the initial year of the project, while hosting an early career researcher symposium in 2016. EVALUATE's findings have influenced the work of European Union institutions, the International Energy Agency, World Bank, and United Nations Economic Commission for Europe. It has laid the basis for the European Energy Poverty Observatory, which will be led by two members of the project team.

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