Energy Vulnerability and Urban Transitions in Europe (EVALUATE) is a five-year European Research Council funded project, underway since March 2013. It aims to investigate the character, prevalence and evolution of energy poverty in European cities. **Energy poverty is defined as the inability to secure a socially- and materially-necessitated level of domestic energy services** (heating, lighting, cooling etc.).

EVALUATE uses a vulnerability framework to study energy poverty, meaning that the **project’s emphasis is on the risk factors that may make a given household, community, city or country susceptible to energy poverty**. As a result, EVALUATE focuses on the manner in which urban policies and institutions, the built fabric and everyday practices shape energy use. Using a wide range of data gathering methods – statistical data analyses, household surveys and interviews with key informants – the project interrogates these issues in the context of several Central and Eastern European (CEE) cities and countries.

**Extensive neighbourhood surveys in CEE**

This policy brief outlines some of EVALUATE’s initial findings about the household and neighbourhood characteristics that drive energy poverty, whilst also highlighting the availability of new open access papers emerging from earlier parts of the project. The results summarised in this brief are principally drawn from detailed analyses of custom-built survey data collected from around 2,500 households in Gdańsk (Poland), Prague (Czech Republic), Budapest (Hungary) and Skopje (Macedonia).

The surveys took place during the winter and spring of 2015 in two neighbourhoods within each of the four case study cities; generally one inner-city and one suburban district.

The implementation of a survey at this scale was necessitated by the lack of locally-specific statistical data. The survey was aimed at establishing the social, spatial and demographic underpinnings of energy vulnerability, its implications for the conduct of everyday life, as well as the nature of social attitudes towards energy and housing reforms.

**Spatial variations in energy vulnerability**

There is evidence to suggest that the energy-related difficulties experienced by CEE households are embedded in dynamics of urban change and policies in the housing sector. Urban areas have been important centres of economic, social and political reform since the end of communism, with the most visible effects of neo-liberalization discernible in capital cities and other large metropolitan areas. Our analysis of neighbourhood survey data confirms this, revealing new layers of neighbourhood differentiation in the emergence and extent of vulnerabilities to energy poverty.

In terms of objective indicators, households were asked four questions relating to the condition of their home, focusing on the presence of mould and different forms of moisture. All of these can be seen as indirect proxies of the quality of housing structures and living conditions – for example, condensation on windows is more likely to form if the home is poorly heated, and a leaking roof is a sign of poor thermal insulation. Overall, significant disparities in living conditions were found between neighbourhood districts within each city, and across the case study cities (**Figure 1**). These patterns were repeated, to a varying extent, when surveyed households were asked about thermal comfort issues, and the proportion of income dedicated to energy costs.

![Figure 1](image-url) **Figure 1.** Distribution of housing faults by case study area. Budapest = BUA/BUB, Gdańsk = GDA/GDB, Prague = PRA/PRB, Skopje = SKA/SKB. Historical and compact inner-city districts are represented by three letter codes ending in ‘A’ while codes ending in ‘B’ denote suburban districts (often including socialist housing estates or individual housing).
Multiple and new vulnerabilities in CEE

The post-communist transformation has also led to notably widening social inequalities in CEE. The shift towards the neoliberal preference for income differentiation has induced growing wage and income disparities, whilst deep economic recession has created a real loss of earnings for many households. These income disparities are reflected in the emergence of territorially delimited areas of social exclusion, and the establishment of new enclaves of affluence. Such trends have transpired despite historically low levels of segregation and spatial polarisation.

In light of the wide-reaching transformations observed in the region, we utilised multivariate hierarchical cluster analysis to explore the sociodemographic patterns of energy vulnerability in CEE. This allowed us to identify several new socio-demographic strata that may be characterised by heightened levels of vulnerability to energy poverty, including: long-term under-occupying residents – households that moved to their present home more than 20 years ago and have fewer people living in the dwelling than available rooms; and working age families, containing households where at least one adult is in full time employment and the survey respondent is aged 25 to 49 years old. Such formations are likely to be the combined outcome of reconfigurations in the social structure of post-communist cities, and continually unfolding patterns of urban neighbourhood segregation. It is evident that current policy approaches, which often prioritise support for groups traditionally considered ‘vulnerable’, will fail to recognise some of the groups identified in our research.

Indoor cooling matters

Perhaps surprisingly, the most commonly-reported thermal comfort issue reported across five of the case study neighbourhoods was the inability to maintain adequate cooling during summer. The highest overall incidence was reported in districts dominated by high-rise blocks of apartments – particularly in Prague and Budapest. This is reflected visually in the built environment, with ad-hoc air conditioning units being a common sight in some parts of the case study cities (Figure 2).

The results of the neighbourhood survey point to the need for considering all energy services in the home, which is at odds with prevailing discourses that have prioritised discussions of adequate heating and cold homes. This is a hitherto under-researched topic, which will be interrogated further during the project via ethnographic research methods.

New open-access publications

The EVALUATE project team is delighted to announce that all of our key recent peer-reviewed publications are now available with full open access. This includes work on the landscapes of energy poverty and inequality in Europe, underpinned by the conceptual contribution to the global understanding of energy services and vulnerability. The articles are:

- A paper in the journal European Urban and Regional Studies (EURS), exploring how the notion of the ‘EU energy divide’ helps us understand energy transitions, regional inequalities and poverty trends;
- A paper in Local Environment on the manner in which energy poverty produces everyday spaces and political relations, examined within the context of recent political and socio-economic processes in Hungary;
- A paper in the Wiley Interdisciplinary Reviews on Energy and Environment, focusing on the landscapes of vulnerability and energy poverty in the European Union;
- A paper in Energy Research & Social Science (ERSS) offering a global perspective on domestic energy deprivation by overcoming the energy poverty–fuel poverty binary.

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