



EVALUATE

Energy Vulnerability Trends and Patterns in Europe

EVALUATE project policy brief no .1

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, and so on).

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 Eastern and Central European (ECE) cities and countries.

This policy brief outlines some of the preliminary findings of the project, while highlighting work in CURE – the Centre for Urban Resilience and Energy (<http://www.seed.manchester.ac.uk/cure/>), which hosts EVALUATE.

Energy poverty and austerity

CURE research is demonstrating that austerity policies associated with the economic crisis in Southern Europe are leading to a rapid rise in the incidence of domestic energy deprivation. In **Spain**, energy poverty has expanded parallel to the unprecedented increase in unemployment: from 8.0% in 2008 up to 27.3% in 2013. A quantitative study based on EU and Spanish surveys concluded that unemployed households are more likely to experience all the typical conditions associated with domestic energy deprivation (Tirado Herrero et al., 2014). In **Greece**, the EVENT project has shown that energy poverty is altering the economic practices and migration movements of the population in urban and peri-urban areas alike (<http://urban-energy.org/event>).

Substantial disparities exist across Europe

According to the results of the EU Survey on Income and Living Conditions (EU SILC), 54 million European citizens (10.8% of the EU population) were unable to keep their home adequately warm in 2012, with similar numbers being reported with regard to the late payment of utility bills or presence of poor housing conditions.

These average figures hide a complex and spatially heterogeneous EU reality, with large differences existing across member states. As of 2012, 25 to 45% of the population living in Eastern and Mediterranean states like Bulgaria, Cyprus, Lithuania or Greece reported living in an inadequately heated home, versus a less than 3% figure in North-Western states like Sweden, Finland, Denmark or the Netherlands. A correlation analysis of Eurostat datasets conducted by EVALUATE indicates that these disparities at the scale of member states are better explained by welfare and monetary and material deprivation levels: Countries with low GDP per capita and high percentages of population at risk of poverty and social exclusion often report a higher incidence of energy poverty as measured by EU SILC statistics.

The combined evaluation of monetary and material deprivation indicators and energy poverty indicators allows for the definition of three energy poverty regions in the EU (**Figure 1**): Southern member states (green), Central and Eastern European member states (red), and North-Western member states (blue).

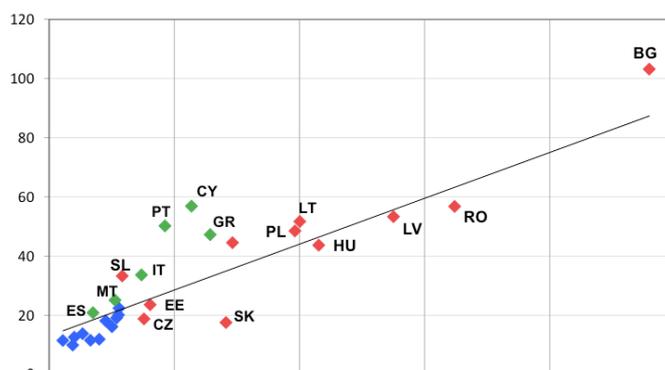


Figure 1. Percentage of people at risk of poverty and social exclusion vs. energy poverty index. Average for EU member states 2003-2012. The energy poverty index combines the three key EU SILC energy poverty indicators.

Energy degradation, price subsidies and politics in new member states

The emergence and development of energy poverty in **Hungary** is the likely result of a combination of legacies and infrastructural inertias (energy inefficient housing stock and over-dependence on imported natural gas from the former Soviet Union) inherited from the socialist state, with repeated policy failures often connected with the attempts of successive democratic governments to control energy prices since the 1990s. Policy measures have taken the form of regulated prices, subsidy schemes and, more recently, government-decreed cuts in utility prices – the so-called *rezsiharc* or ‘battle of the utility bills’ that has been one of the central themes of the April 2014 general elections. Despite such attempts, rapidly growing energy prices and burdens resulting in worsening energy poverty conditions have been documented since the mid-2000s. They evidence the incapacity of short-term price-based interventions to deal with a fixed infrastructural setting that operates in parallel with a fluid system of energy supply (natural gas) exacerbated by Hungary’s weak position as an energy importing economy. There is evidence that the entire situation is leading to the phenomenon of **energy degradation**, whereby households are switching towards less advanced and more polluting fuels – such as firewood and coal – in order to meet their basic needs.

Inflationary domestic energy prices in the EU pose additional risks

Significant differences also exist in the price of household natural gas and electricity across member states. Paradoxically, countries with high levels of energy poverty – like many ECE countries and some Mediterranean states – often report prices below the EU average and North-Western Europe figures. Domestic energy prices remain a key driver of energy vulnerability in the EU because of their inflationary character. The temporal analysis of Eurostat’s Harmonized Consumer Price Index (HCPI) carried out by EVALUATE indicates that domestic energy has recurrently outpaced the inflation rate in the EU as whole since the mid-1990s (**Figure 2**). An additional member state-level assessment for the 2004-2012 period found that practically all EU countries report a difference between the average HCPI for domestic energy and annual inflation rate above 2%, with some cases (UK, Latvia or Greece) showing 6 to 10 percentage points of difference with the average annual inflation rate.

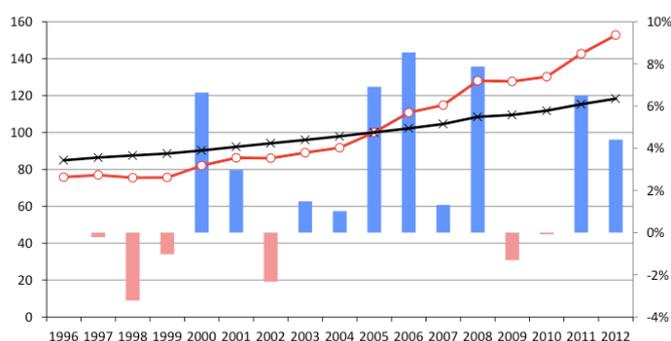


Figure 2. Inflation rate and HCPI for domestic energy category; EU annual average for the period 1996-2012. Lines represent the evolution of both price indices (2005=100) and bars the percentage point differences in annual inflation rates.



Figure 3. Residential buildings in Kriva Palanka, Republic of Macedonia (Photo by Stefan Bouzarovski). The lack of district heating systems means that households are consuming firewood to heat flats in multi-storey apartment blocks. Natural gas is not used even though a major pipeline skirts the city.

Further steps: Pro-active efforts needed to address the drivers of vulnerability

The complex and dynamic character of energy poverty across member states needs to be acknowledged by decision makers at various scales of governance. Two trends directly connected to key driving factors are highlighted here:

First, EU policies need to consider the **differential impact** that the on-going global economic and Euro area crisis is having on welfare levels across member states, with a particular emphasis on the effect of austerity measures on monetary and material deprivation rates.

Second, efforts to liberalize and privatize the EU’s energy sector need to take into account **domestic energy affordability and access criteria**, while undertaking a careful consideration of the energy poverty risks that the transition to a low-carbon EU poses in terms of increasingly higher real energy prices in the forthcoming decades.