Energy Poverty

Study for the ITRE Committee

EN 2017
Abstract

This report summarises the presentations and discussions made during a workshop on 'Energy Poverty' organised on 9 November 2016 by Policy Department A for the Committee on Industry, Research and Energy (ITRE). The invited experts provided an academic perspective on energy poverty landscapes in the European Union and presented results of two studies on energy poverty commissioned by the ITRE Committee. The presentations and proceedings of this workshop should support the ITRE Members in their evaluation of the related legislative proposals in the “Clean Energy for All Europeans” package.
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LIST OF ABBREVIATIONS

BPIE Building Performance Institute of Europe
EED European Cohesion Fund
ECF Energy Efficiency Directive
EFSI European Fund for Strategic Investments
EPOV European Energy Poverty Observatory
ERDF European Fund for Regional Development
ESF European Social Fund
EU European Union
MS Member States
INI Own-initiative
MEP Member of the European Parliament
MFF Multiannual Financial Framework
ITRE Committee on Industry, Research and Energy
SILC Statistics on Income and Living Conditions
UK The United Kingdom
EXECUTIVE SUMMARY

On 9 November 2016 ITRE held a workshop on energy poverty in the European Union. The aim of the workshop was to provide expert information on the state of play in this field. Furthermore, it tackled possible policy initiatives in connection with the ongoing legislative work related to the Energy Union, especially the expected reviews of the Energy Efficiency Directive (EED), the Energy Performance of Buildings Directive (EPBD) and a review of electricity market design.

The first speaker, Mrs. Saska Petrova, talked about the energy poverty landscapes in the European Union from an academic perspective. She pointed out that the first academic work on energy poverty has come from the United Kingdom. ‘Fuel poverty’ was defined as the inability of a household to afford domestic heating – and other energy services – in cases where it needed to spend more than 10 per cent of its income for this purpose. More recently, an extensive explanation of the implications of this definition was given and a new definition in the UK context was proposed: the ‘Low Cost High Income’. The work of Mrs. Petrova and her colleagues is about determining the risks and causes that can put households in energy poverty and circumstances that can lead households to exit from the situation of energy poverty. Afterwards Mrs. Petrova presented pros and cons of a common EU definition:

- **Pros**: it can increase recognition of the problem in Europe (better political visibility), it can also resolve some of the terminological confusion (clarification), it can provide policy synergies by providing links between different domains: social policies, industry, health care policies as well as pure energy policy with regard to electricity or gas markets;

- **Cons**: a common definition can erase existing geographical specificities, such as different socio-economic, political or regional circumstances.

The academic research identified a set of three key causes of energy poverty: energy prices, falling household incomes, and living in an energy inefficient home. The last factor has recently gained the most attention. Due to the lack of a common definition of energy poverty in the EU there are different estimates of this problem ranging from 50 to 160 million people concerned. The existence of an ‘energy poverty divide’ within the EU is well established in the academic literature: the prevalence of the condition in Eastern and Southern European states is particularly high. Numerous academic contributions have emphasized that elevated levels of energy poverty in post-socialist countries can be linked to price increases associated with the liberalisation of national energy markets. Energy transitions, marked by the decarbonisation of energy systems, are of potential relevance to the expansion of energy poverty.

There are different opinions among academics on how to tackle this problem: universal energy price subsidies are not an efficient tool of redistributing income, because high income households usually consume more energy compared to poorer ones. Income support via the social welfare system may hence be more effective. Other indirect methods could include support of public transport, and systemic retrofit of the housing stock. Low-carbon transitions could be fairer if they were funded from income taxation rather than levies on energy bills.

The second speaker, Mr. Benjamin Reiner, presented the results of a study prepared by the Öko- Institut Berlin. The study found that energy poverty is a problem in Europe that is prevalent in many Member States (MS), not limited to low-income or high-income MS, South or North, and it has been being discussed in all of Europe. Mr. Reiner presented the cases of Ireland, France, Bulgaria, United Kingdom and the main programmes addressing
the energy poverty problem in these countries. He distinguished three different policy types and their advantages and disadvantages: social policies, support for building renovation and allowances to energy for low income houses. The main challenges identified by the study were: availability of data, identification of households, acquisition of funding and making the long term solution.

The third speaker, Mr. Sergio Ugarte, presented the draft results of the study: "Energy Efficiency for Low-Income Houses". The study looked at the impacts of energy efficiency on the low-income households (environmental, social, economic). Then the authors looked at the barriers to energy efficiency (informational barriers, difficult access to capital and the split incentives barrier (i.e. landlord - tenant dilemma)). Finally the authors classified the policies in three groups: general energy efficiency policies, specific energy efficiency policies addressing the low-income households and social policies. According to the gross estimation by the study between 55 to 110 billion euros investment is needed in Europe to solve the problem of energy inefficiency in the low-income households. The recommendations of the study were directed at the recast of EED, EPBD and the Energy Labelling Directive and concerned the scale of energy efficiency measures and putting emphasis on social benefits in addressing barriers in the policy measures. The authors highlighted that the choice of specific policies should be left to the Member States and that the MSs should basically first implement structural policies such as “Habiter Mieux” in France.

During the debate the majority of ITRE Members supported the approach of the speakers. Mrs. Griffin appreciated the speakers’ emphasis on the fact that the problem does not only need a social solution but it also addresses the climate change agenda and, economic policy. She also stressed the important role of local actors and the exchange of best practices. Mr. Henkel pointed out that energy poverty was caused by the increase of energy prices and transitions in Eastern and Central Europe, as well as austerity policies in reaction to the financial crisis. Mr. Turmes stressed the need for a common definition, careful design of energy efficiency policies, access to capital and information. Mr. Sylkiotis emphasised the low accessibility to financing of the photovoltaic installations in Greece and Cyprus. For Mr. Kohlíček the main problem of energy efficiency is the salary gap between the Member States. Mrs. Spyraki argued that we need to look at different sources of financing such as the money coming from the Multiannual Financial Framework (MFF) but also from the European Fund for Strategic Investments (EFSI).

In their answers the speakers pointed to the following main aspects of the energy poverty problem: energy poverty is not only about your income but also about your housing/life arrangements; one should take into account the benefits on different sectors, particularly the impact on the public health systems; the importance of the flexibility of the energy system: having a choice to switch from one system to another; energy poverty as a useful concept at the crossword of energy policies and social policies that allows to prioritise the allocation of funds; the risk of the increase of energy poverty with the growing energy prices; the role of different flexibility options such as energy efficiency and demand response; better use of available funding such as ERDF, ECF, EFSI, ESF, including the health funds.
WORKSHOP PROCEEDINGS

Opening remarks

MEP Jerzy Buzek, ITRE Chair

The Chair Jerzy Buzek started by stating that energy poverty has become an issue in Europe. According to estimates between 15 and 125 million people in Europe are at risk of energy poverty. There are different causes such as low income, high energy prices, and poor energy efficiency. It is expected that the transition towards low carbon economy can make even more people in the European Union facing this problem because of certain costs of the transition period. The Committee on Industry, Research and Energy (ITRE) has addressed this problem in their work on several occasions and Mr. Buzek reminded that in its 2015 resolution “Towards the Energy Union” the Parliament has asked the Commission to publish a Communication on energy poverty including a definition and indicators of energy poverty that should be accompanied by an action plan to fight it.

The Chair emphasised that it is important to find the solution for the energy poverty problem in connection with the revision of the Energy Efficiency Directive (EED) and Energy Performance of Buildings Directive (EPBD) and the review of the electricity market. The workshop was organised in that context to discuss the problem of energy poverty from an academic perspective and to present the results of two studies commissioned by ITRE. After introducing the first speaker the Chair passed the floor to Mrs. Saska Petrova.

Energy poverty landscapes in the European Union from an academic perspective

Mrs. Saska Petrova, Professor at the University of Manchester started by saying that this workshop demonstrates once again that energy poverty is gaining increasing policy and scientific attention across the European Union (EU). Energy poverty has now entered the official lexicon of mainstream decision-making institutions in the EU, and is firmly integrated, already in the Third Energy Package as well as the Energy Union Framework.

Mrs. Petrova’s presentation succinctly outlined the significant body of scientific evidence and research on issues of energy poverty in Europe. Ms Petrova emphasised that energy poverty in Europe has often been understood via other terms, such as ‘cold homes’, ‘non-payment’, and ‘energy precariousness’.

The key strand of work has come from the United Kingdom, where it was Brenda Broadman (1991) who first described and publicised the problem in an exhaustive manner. She understood ‘fuel poverty’ as the inability of a household to afford domestic heating – and other energy services – in cases where it needed to spend more than 10 per cent of its income for this purpose. More recently, a widely-discussed review undertaken by economist John Hills (2012) provided an extensive explanation of the implications of this definition, proposing a new definition in the UK context which is the ‘Low Cost High Income’ definition.

With a number of colleagues including Stefan Bouzarovski, Harriet Thompson, Sergio Herrero, and Nils Simcock they have also tried to develop a global definition of energy poverty. Their work is not only about the present situation of energy poverty but also to determine the risks and causes that can put households in energy poverty and eventually circumstances that can lead households to exit from the situation of energy poverty. For them energy poverty is not a static but a dynamic situation. In their definition energy poverty is a situation or a combination of risks that can put a household in energy poverty. They focus on the fact that all households that suffer from this form of hardship are in
some way unable to participate in the customs and practices that define a membership of society – to a level that is both materially necessitated (i.e. deprivation causes ill health) and socially conditioned (because it prevents them from achieving the everyday practices that energy enables).

Many academics have argued pro and contra a common EU definition: Thomson et al. (2016) highlighted that a common EU definition can increase recognition of the problem in Europe (better political visibility) and also resolve some of the terminological confusion (clarification). It can furthermore provide policy synergies by linking between different domains: social policies, industry, health care policies as well as pure energy policy with regard to electricity or gas markets. Other colleagues have been against a common definition arguing that it can erase the specificities of existing geographical circumstances such as different socio-economic, political and regional circumstances.

Understandings of the driving forces of energy poverty in the European context have advanced significantly in the last years. Traditionally, academic research on the subject identified a set of three key factors including energy prices, falling household incomes, and living in an energy inefficient home. This is a traditional triangle of risks that compose different drivers of energy poverty.

However, more recently poor residential energy efficiency has been addressed as one of the principal causes for most of the adverse effects of energy poverty, because it leads to low levels of thermal comfort, draughty dwellings, as well as the presence of humidity and mould in the housing. Mrs. Petrova emphasised that the location of energy poverty drivers at the intersection of incomes, prices and energy efficiency means that this condition is a form of material deprivation that extends beyond income poverty.

In addition, households with above-average energy needs – families with children, pensioners, disabled people – have been shown to be more susceptible to energy poverty. Households trapped in housing arrangements with inflexible heating systems, underpinned by the inability to switch to a more financially accessible or technically convenient form of energy service provision have also increased risks of being energy poor.

Energy poverty is a result of broader inequalities in the governance of the housing stock, often including issues of housing tenure – with households in the private sector being particularly disadvantaged.

Since we do not have a common definition of energy poverty in the European Union it is very difficult to quantify the extent of energy poverty in the EU. Very often academics use two datasets provided by Eurostat i.e. the EU Statistics on Income and Living Conditions (the SILC survey) and the households’ budget survey. These surveys include different variables which leads to different numbers estimating the extent of energy poverty in the EU, which differs from 50 million to 160 million of people.

Afterwards Ms Petrova talked about geographies: The existence of an ‘energy poverty divide’ within the EU is well established in the academic literature. While energy poverty occurs across the EU, the prevalence of the condition in Eastern and Southern European states is particularly high. Different variables and different indicators have shown that energy poverty levels are the highest in Bulgaria (30.6 per cent), Cyprus (21.2 per cent) and Romania (24.1 per cent). The causes for this are different. Numerous academic contributions have emphasized that elevated levels of energy poverty in post-socialist countries can be linked to price increases associated with the liberalization of national energy markets. Bouzarovski and Tirado Herrero (2016) have shown that domestic energy prices have increased by 33% in Poland, 22% in the Czech Republic and 69% in Hungary between 2006 and 2011. Levels of energy poverty have also been high in Southern European Member States, mostly due to the lack of adequate heating systems, and
inefficient housing. Household energy costs in Mediterranean countries are also affected by the need to cool the houses in summer. This is reflected in EU-SILC data, which has shown that approximately one-third of respondents in the eight EU Member States bordering the Mediterranean Sea mentioned that they are unable to keep their homes adequately cool in summer. The austerity regime in Greece has also affected the levels of energy poverty in the country.

Energy transitions, marked by the decarbonisation of energy systems, are of potential relevance to the expansion of energy poverty. These processes can affect low-income households if the costs of low carbon interventions (such as investment in solar and wind renewable energy) are disproportionately borne by end-consumers through energy bills. Thus, while increased taxes on diesel and petrol - and to a lesser extent natural gas - are overall less negative to the poor, the additional taxation of electricity affects poor households significantly. That has been shown in a number of studies.

Yet many academics support the argument that universal energy price subsidies are not an efficient tool of redistributing income, because high income households usually consume more energy compared to poorer ones. Income support via the social welfare system may hence be more effective. Other indirect methods could include support of public transport, and systemic retrofit of the housing stock. It has also been suggested that low-carbon transitions could be fairer if they were funded from income taxation rather than levies on energy bills. Ms Petrova showed a list of further readings in her last slide. She added that her institution (the University of Manchester) is involved in a project that covers some of the most affected countries in Eastern Europe which are Hungary, the Czech Republic and Poland. The University of Manchester also leads the consortium of the European Energy Poverty Observatory (EPOV) that is a 40 month research project, having started in December 2016, and which aims at engendering transformational change in knowledge about the extent of energy poverty in Europe, and measures to combat it.

**Presentation of the results of the study: “How to end energy poverty? Scrutiny of current EU and Member States instruments”**

The study requested by ITRE was prepared by Öko-Institut and Mr. Benjamin Reiner was one of the authors. The study was analysing the situation of energy poverty in several Member States and the strategies to fight it. The aim of this exercise was to collect relevant data and look for patterns and new insights. The study was therefore about identifying hypotheses and linkages, not about testing them or assessing trends in known patterns. Publically available data on economy, building performance, energy costs, and climate were found to be most likely factors to influence energy poverty. Additional information was gathered from interviews with experts in the field in MS. Where available, they looked at reports and policy papers from national energy poverty programmes.

The study found that energy poverty is a problem in Europe that is prevalent in many MS, not limited to low-income or high-income Member States, South or North, a problem that has been discussed in basically all of Europe. They have selected some cases in Europe that have been differentiated geographically, economically (high and low-income) and they had EU-15 and some countries from Eastern Europe that joined EU in 2004. The first generic findings made were the following:

Prices for energy were on the rise in all Member States and this may be a problem in the future as well. It is only loosely connected to macroeconomic indicators as not only low-income Members States are suffering from this problem. It is acknowledged as a problem in most Member States in some way, but not all put it explicitly on the agenda. Sometimes it
is subsumed in the general social policies but most MS talk about this problem. Definitions and policies are very different and they also have different track records.

Mr Greiner started his presentation of the countries analysed in the study with Ireland. It is a Western MS with a rather high income but it is still one of the most strongly affected by energy poverty in Europe (20% of population affected by energy poverty using the 10% definition: people are using 10% of their income on energy) and among the poorest part of the households 50% are affected by this problem. It is because the buildings’ quality is very low and Ireland has a high number of days that is required to heat the buildings. Ireland has two pronged approach since 2011: one set of policies aim at improving homes through funding energy efficiency measures and policies supporting low-income households. For this, they have seasonal and earmarked allowance payments as well as the Better Energy/Warmer Homes scheme, which funds energy efficiency measures. Additionally in 2015 Ireland has introduced some unorthodox measures for unregulated oil market. A lot of Irish customers rely on oil. They have started Buyers clubs (common purchase of oil) to attain better contracts with suppliers for customers, and Oil Stamps Savings Programme to help people put aside enough money for their winter fuel. These measures were very new at the time of introducing them.

The next country, France is using the 10% definition of energy poverty. The peculiarity of this case is that energy is a “basic right” in France. As a result the utilities are not allowed to cut off energy supply during winter even if their customers do not pay their bills. 36% of the poorest quarter is strongly affected by energy poverty, which means 3.5 million households in France overall. France is relying mainly on social tariffs which means lower tariffs for people with lower income: It is the energy company’s obligation (Energy Solidarity Fund) to support debtors providing social tariffs for electricity and gas. France also has a ”Habiter Mieux” programme: a home improvement scheme funded by the state and energy companies, which enables low income people to improve their homes. This programme has been effective for the targeted people but it only reaches a minority of people concerned (by 2015 50 thousand buildings had been renovated out of 3.5 million affected households).

Bulgaria is one of the Central Eastern European countries that is mainly hit by the energy poverty problem. It is one of the MS in the EU with the least income and it has an outdated building stock (50% of population is at risk of general poverty and the majority of them are affected by the energy poverty resulting in health problems and premature death). Another problem is the lack of data on the building stock and on the population in general and a lack of resources to help people to apply for state funding. In Bulgaria social policy covers heating but only to a very limited extent. There are also some building improvement measures, which are general energy efficiency measures but they are not targeted at energy poverty.

The last example presented by Mr Reiner was the UK, where the discussion on energy poverty in Europe is among the oldest; it has been on the agenda since the 80s. The UK is switching to the “Low Income, High Costs” indicator which is a very elaborated methodology as it does not only focus on the cost that people actually pay for energy but it focuses on the modelled hypothetical energy cost taking into account the data on the building stock and heating necessities. This indicator should find out what these people would have to pay in order to heat their houses properly. The British indicator tries to solve the problem of cost-cutting, where people fall below the 10% threshold of income spent on energy because they save on heating while risking their health. The income-based definition of energy poverty does not catch this problem. The UK does not give a lot of states’ benefits and it is also implemented by the devolved authorities (governments of England, Wales, Northern Ireland, etc.). On the federal level they have energy companies’
obligations to fund efficiency improvements and offer special tariffs. Because of the good experience with the devolvement of policies to the institutions at regional levels, there will be even more devolvement down to the municipality and city levels in 2017.

Looking at the results of their analyses Mr Reiner noted that a three step approach to social policies could be observed:

1. Targeting the fuel poor: Defining who is fuel poor and designing a policy accordingly;
2. Identification: Actually finding fuel poor households, informing them about social policies, and making them eligible for social tariffs;
3. Implementation: asking how the situation for beneficiaries of social policy is effectively improved.

The study has found the following challenges in this approach:

Targeting is basely about how we define energy poverty and there are pros and cons of this approach. The expenditure based approach is simple as we ask how much money people spend on energy and when it is over 10% we will define them as energy poor.

But this is not taking into account cost cutting measures (that people save in other expenditures to be able to pay energy bills; it can result in health problems, for instance). In order to solve this problem we have “Low Income, High Costs” indicator this is more elaborate and probably more precise but it is very data and labour-intensive. Even in the UK where we have a massive government effort to collect scientific data it is still a difficult indicator to assess. And lastly there is a situation of no real definition on energy policy but including energy policy as an allowance, e.g. if you receive social benefits in Germany there is a certain energy allowance included there which does not really assess whether this is a case of energy poverty or not. That’s the trade-off you have to do while designing policy because low income does not automatically mean energy poverty and poor housing neither. It takes a lot of resources for tackling this problem precisely.

The following elements were found relevant for the identification problem. Brenda Broadman estimates that in the UK less than a quarter of funds reach actually energy-poor people. Exact estimation of these funds is difficult, mainly due to the lack of data. Another problem is applying for these funds, even among the recipients of social funds they have to additionally apply for energy funding. There has been a positive experience of devolving these funds to local authorities (it has been done in France most profoundly). At this level the administration is able to identify energy poor people more effectively because they know their neighbourhoods better. Then Mr Reiner presented the main matrix of the study showing that most Member States tackle energy poverty through social policy. The study shows the social electricity and energy tariffs that were successful in Greece and Spain because they helped people, however, they could not tackle the root causes. As many people were affected by these tariffs there has been a lot of financial pressure on the energy suppliers who were obliged to offer social tariffs and in the end they got problems with their own financing and were driven into debts.

The second kind of policy addressing the energy poverty problem is the support for building renovation, which can be observed in France and the UK. This policy treats the roots of the problem. However this solution implies big funds and it can be problematic for many countries such as Bulgaria. Another problem is that the low performance of buildings do not equal energy poverty. Many people in low quality homes can afford the energy bills.

And lastly there are allowances to energy for low income houses in Italy and Bulgaria and also in Germany. The advantage is the low administrative burden but it shares the problem
of not targeting a specific group of people efficiently and it does not target the root cause. It is a trade-off to make if you look at how effective this policy is. When you have many people affected by this problem as in Bulgaria, identification is not a problem. The different issue is the allocation of funds.

The challenges are the availability of data, identification of households, the acquisition of funding and making the long term solution. When we talk about how the EU can help with these policies: is it useful to have a solution on the EU level as it is such a diversified problem? One issue is the availability of the data on the housing stock. The Building Performance Institute of Europe (BPIE) has a lot of data but is not very detailed on the MS level. Mr Reiner showed the main recommendations of the study on his last slide.

**Presentation of the results of the study: “Energy Efficiency for Low-Income Households”**

Mr. Ugarte presented the draft results of the study: “Energy Efficiency for Low-Income Houses” that was requested by ITRE. Mr. Ugarte emphasised that the study is based on the research done by important researchers in the field such as Mrs. Petrova and the colleagues on the definition of the energy poverty and the analysis of their risks, and that the different aspects of energy poverty and the number of people impacted by this phenomenon has been already presented by the previous speakers. Low income is not necessarily the only root cause, it is also the amount of energy that a household is using. If the household needs a lot of energy and additionally have low income, they will not be able to pay the bills on the large amount of energy they are using. Therefore energy efficiency is an important variable in solving the energy poverty problem. By using social policies only we can achieve some minimum levels of comfort.

Therefore the focus of the authors of the study is on energy efficiency: what are the impacts of energy efficiency on the low-income households. The first impact is obvious: environmental, as we are helping to save the planet because we are reducing the use of energy resources. Other important impacts for this group of people are the social and economic impacts: we can help this group of people to improve their health, which also means reducing the health bill for the governments. We can help to create more work opportunities, we can help them to improve their competitiveness, especially for the kids that have better conditions for studying. Social benefits are therefore very important to focus on while addressing the problem of energy poverty.

Then the authors asked about barriers to energy efficiency. Why is there such a number of inefficient households? The main barriers are informational barriers: many people do not have the right information how to save energy or the available information is not actually designed to cover their specific needs. In some cases there is also a correlation between lower levels of knowledge and low income, which complicates the situation. Mr. Ugarte added that it is not a rule because we see in Eastern Europe cases when highly educated people suffer from energy poverty because their houses are poorly insulated. The second kind of barriers is the lack of access to capital. There are people that know how they can make their households more efficient but they do not have the money such as the initial savings to invest, or they are not creditworthy to access capital. The third barrier is the split incentives barrier, the well-known landlord - tenant dilemma: who should pay for the investment in energy efficiency if the other person will benefit from it. The landlord says why he should invest in the insulation if they cannot raise the cost of the rent. On the opposite side the tenant is asking why he should do it if the landlord will profit from the increased value of the property.
Then they have looked at energy efficiency policies that could tackle these barriers. They classified the policies in three groups: general energy efficiency policies, specific energy efficiency policies addressing the low-income households and social policies already well described by the previous speaker. Social policies alleviate rapidly the risks of energy poverty because they cover the energy bill. General policies also tackle the general problem of energy efficiency but they mostly do not reach the segment of low income people. It’s only the energy efficiency policies directed to low income people that make the social benefits appear. Unfortunately these policies are the least represented in Europe: only very few countries have these policies in place. Just as an estimation from about 50 to 160 million people are at risk of energy poverty in Europe that means 25 to 55 million households in Europe living in energy poverty. The programmes that have been successful in remediating this problem have invested as an average 2500 and 5000 € per household to improve their energy efficiency. This is a gross estimation of the authors of this study.

In reality this would mean 55 to 110 billion euros investment to solve the problem of energy inefficiency in the low-income households. Mr Ugarte emphasised that through this action we would also be able to reach a part of the Energy Union goals.

Then Mr Ugarte moved to the recommended policy, focusing on six overall recommendations.

1. In spite of the fact that for the two last decades the problem of energy poverty has been recognised in Europe, there is no definition at EU level and there is no definition of vulnerable customers. It is better to have a common definition with a special care of the different realities in different geographies that can be left to Member States to adjust to their specificities. Common definition is needed because only with such a legal definitions the EU directives can give indication what can be done to solve the energy poverty problem, basically the recasts of the ED and EPBD could bring these definitions in the new versions.

2. Besides all the social benefits discussed we need to solve the problem of energy efficiency in low income households if we want to achieve the climate targets for 2030 and 2050. 36% of emissions of CO2 is coming from the housing sector. That means that if we want to achieve the climate targets, all households: low income and high income must be energy efficient in the future. That means that the problem of energy efficiency in low-income households has to be solved from the different angle, not only the social perspective angle but also from the EU climate policy perspective angle. They recommended that the recast of EED and EPBD should include an obligation of reporting of the progress of energy efficiency in different household segments including low-income households. Also the EED should require the Member States to include sub targets for energy efficiency for specific vulnerable groups like low income households.

3. The design of energy efficiency policies should explicitly support the social policies, so when we design energy efficiency policies for low income households or in general we should explicitly say that this brings social benefits as well, it is not only about climate. The design should attempt to limit counterproductive effects such as rebound effects, which means that when we consume less energy and reduce its bill we could start consuming more energy for other things. Specific recommendation is that EED and EPBD and Labelling directive should request Member States to take benefits of energy efficiency into account in training and education obligations. And Member States can proactively communicate multiple benefits and share experience with other MS.

4. A policy framework must integrate measures that address these barriers that exist for a specific group of low income households or for vulnerable household in general. We recommend that EED and EPBD address the barrier issue in their preambles and request
the Member States to include such a request in their strategies for building renovation that include limits to rental rates for buildings with low energy label, e.g. an example of a housing association in Utrecht that has renovated post-war houses with very low efficiency rate without raising the rents for the tenants because they actually created a well-functioning business model from it. EEF could address the issue of barriers. EPBD could communicate benefits of energy efficiency to the stakeholders.

5/6. The last two recommendations are considered the most important by the authors of the study. The choice of specific policies should be left to the Member States and MSs should basically first implement structural policies (not just a small programme but structural policies which already exist in the US and New Zealand with very good success rate). In Europe we have already some good examples, one of them is “Habiter Mieux” in France, another one is Energy One Homes in Ireland, there is also a home’s energy efficiency programme in Scotland and Caritas Stromsparcheck in Germany.

All those examples already have elements that make policy efficiency for low income houses a successful policy. They bring the right information directly to low income household inhabitants. They make free energy audits identifying where and what can be improved in the households. They help in the renovation with access to financial resources. These renovations should start with insulation of homes rather than with replacing the refrigerators. Members States should use funds from other sectors also benefiting from energy efficiency policies, such as European Fund for Strategic Investments (EFSI), European Fund for Regional Development (ERDF) or European Social Fund (ESF). These funds should also be better used to finance energy efficiency.

Questions & Answers, open debate

Mrs. Griffin, MEP, emphasised that ITRE has already done a lot of work in relation to the own-initiative report (INI) on “Delivering a new deal for energy consumers”. They have also developed as part of the S&D group a Manifesto on energy poverty and as a MEP representing North-western England she has organised a workshop and she was also counselling Liverpool. She says that nobody has to choose between cooling, heating or eating. She also thinks that energy is not a commodity, energy has got to be a basic social right. All the recommendations presented by the speakers frame all her thinking of the legislation. In “Delivering the new deal for energy consumers” the Parliament said that the consumers should be told what the cheapest price for them is. We know that from 1% increase in energy efficiency, 3 million homes can be renovated and 7 million people can be lifted out of the energy poverty. We also know that the poorest citizens are leaving in the leakiest houses. Mrs. Griffin pointed to a landlord-tenant dilemma: how do we incentivise the renovation that the tenant does not have to pay out the capital? There are ways to do it, we can mobilise pension funds; the local actors are crucial in this. Mrs. Griffin appreciated the emphasis the speakers put on that it is not only about the social solution but it addresses the climate change agenda, and economic policy. The Commission has agreed now to establish an Energy Poverty Observatory (EPOV) in 2017; it was a call from the ITRE Committee to establish that. They were calling for good data, wanted a common definition on energy poverty, anything what we can do collectively. But crucial is the exchange of best practices, the local actors are crucial in this. It is absolutely eminent that the Member States know that there are solutions of a different nature: economic and social. We have to ensure in Europe that for energy vulnerable people the energy supply cannot be switched off.

Mr. Henkel, MEP, said that he does not share the approach of the speakers. First of all it appears to him that the same groups of people responsible for ever increasing energy
prices are those who now worry about the effect those energy prices will have on the poorer. He has not heard anything about this in the presentations. He believes that it is very unfortunate that we have people who cannot afford energy but he thinks it is equally important that we have people who cannot afford food, housing or clothing. He asked whether we should now have separate programmes for all of these people. He thinks we have social policy to address poverty and we have environmental policy to address the climate change. He thinks if we start mixing policies we will have an example of a drastic state intervention.

Mr. Turmes, MEP, said that due to a bad management of the crisis, we have overstretched austerity policies and this has driven millions of Europeans which were not in a poverty into more poverty. Therefore we should also think about the bigger context. And then we have a specific context of energy poverty, where he can see two areas: one is the specific situation of the ex-Soviet area which had a culture of inefficiency mixed with a culture of subsidised artificial low energy prices and which today have not yet the purchasing power of Denmark or of Germany. Therefore he very much agrees that we need a common definition, also to make sure that the queen is not energy poor. The British definition where Buckingham Palace is energy poor is a nonsense. Second it is about a design of energy efficiency policies. Energy efficiency policy in Europe was designed for upper class middle-high income: people which have access to internet and which have cash, so he liked very much the statement of the last speaker Sergio Ugarte that it is important to understand how we can get access to capital and how we can trigger information which is also easily accessible for people without a university degree. Mr. Turmes wants the energy intelligent Europe to have the programmes that bring the best actors in Europe together on how to design energy efficiency policies for low income households. And second he wants to have a better use of the EU budget through the structural and investments funds and EFSI fund in Eastern Europe. Therefore he thinks we should push Europe to have more structural funds, more Juncker Investment Fund and more ESF money helping Eastern Europe in a certain sense to retrofit their building stock, especially by bringing access to capital for the energy poor. Mr. Turmes reminded about a new "Ecodesign Working Plan 2016-2019" announced by the Commission at the end of November 2016 and he stressed the importance of eco-design and eco-labelling with help of which we can save the Sweden’s electricity consumption between now and 2030.

Mr. Sylikiotis, MEP, thanked the speakers and pointed out that a lot of very accurate data was presented showing that a lot of sectors of population are affected by energy poverty without having chance to cover their energy needs whether it is heating or cooling. He comes from the South where it is often more a cooling problem than heating. He expressed his support for the definition and the measures presented by the speakers. He thinks that the distribution systems belonging to the private sector makes energy dearer and that the energy network should be public. The state is responsible to cover the basic needs and there are some measures in force but they are insufficient. People depend on systems to give them access to energy supply. In Greece there are areas that because of the crises people became very poor now. There is a natural network but most people cannot have access to it for a cost reasons. Secondly, as we have seen in Cyprus, households cannot afford to have for instance photovoltaic panels on their houses at a cheap rate. They need partial subsidies to allow them to cover their basic needs by having these systems installed. Finally there are some MSand regions of the EU that are not linked to the major energy networks, so they have no access to cheaper energy, e.g. Cyprus and Ireland or mountainous areas where people are using other forms of energy because they are not linked to the energy network. This issue has to be approached at the European and national energy level.
Mr. Kohlíček, MEP, referred to the statement by Mr. Turmes that people in Eastern Europe were used to cheap energy and it is the problem. Mr. Kohlíček stated that energy used to be cheap everywhere in France and Eastern Germany, Belgium, even in England because they had their own energy resources, so if we compare possibilities of people we should look at the average salaries. In the Czech Republic or in Bulgaria only one third of people reach the average salary. The rest have even lower income. Therefore comparing them with Western countries, we cannot say that a lot of people in Western countries cannot afford the special techniques. For the Southern Europe, the building stock there must have better insulation, they need to have better windows but the main problem is in the salary gaps when we compare these countries. We only need to wait until this gap is smaller and only after this we can talk about the common definition for the energy poverty. Because you cannot compare rich and poor countries. You would then find a result that in Bulgaria 50 % of people are energy poor, while in France or Benelux, in countries where salaries are much higher, we can see that all insulation measures such as double glazing or photovoltaic panels, are affordable there.

Mrs. Spyraki, MEP, thanked all participants for their presentation because it is very important to understand that tackling energy poverty is an issue that we have to go on very fast. She emphasised that we should do it by exchanging best practices such as the ones mentioned for France. This regards especially retrofitting buildings, especially houses. We can use money coming from Multiannual Financial Framework (MFF) but also from the European Fund for Strategic Investments (EFSI). Second issue is reducing of our energy costs. The liberalisation of our national energy markets is also essential, for instance the liberalisation of the Greek market that at the same time has to be monitored.

Answers by the speakers

Firstly, Mrs. Petrova reminded that maybe energy poverty is a wrong name because it is not only about income. For her it is a combination of number of factors which mostly make a kind of material deprivation rather than poverty. When we talk about food poverty, it is about food and about people being able to buy or not to buy different kinds of food. When we talk about energy poverty it is not only about your income but it is also about your house. It is about you being able to have a normal life in one society. So, we can even see that it is not only in Eastern Europe that people with middle income if they are trapped in special life arrangements, like in the rental market and if the rental market is not regulated, then they can actually experience some of this material deprivation. Even if their income is relatively high at the end of the day they will not have enough of their income to pay for their bills.

Secondly, Mrs. Petrova pointed out that when we talk about energy poverty, one should take into consideration the benefits for different sectors. Research shows that in the moral society we have to think about low income houses not only because they should have normal life in normal energy efficient houses but also because the benefits of the increased energy efficiency are multiple. So, we have to take into consideration the health benefits. The academic research has shown that actually people who leave in social housing do not use much energy because automatically they save energy as they cannot afford their bills. When they at some point improve energy efficiency of their houses then their health improves and the burdens on the public health systems can be decreased at the same time.

If we go back to some of the post-socialist countries in Central and Eastern Europe, we have to acknowledge the efforts that have been made in some of these countries with regards to energy efficiency e.g. in the Czech Republic, where the country provided quite a significant fund to increase energy efficiency of the building stock. One problem that can be
seen in some of these countries are the decisions that have been made in a post-socialist period. In some cases, in some towns and cities, many households are entrapped in different energy systems that are not flexible. Very often there are cases of district heating systems being in public partnerships and there are households that do not have any other choice than to use the heat provided by the district heating systems. So, it is often about having the choice.

Finally Mrs. Petrova reminded about the importance of the flexibility of the energy system: having a choice to switch from one energy system to another.

And she supported the idea that now it is the right time to discuss energy poverty, especially when we think about ongoing energy transition that include decarbonisation. The question is who will pay for this decarbonisation.

**Mr. Greiner** started by saying that he believes that energy poverty is a useful concept. We can talk about energy efficiency policies/energy policies on one side and social policies on the other. You can keep them separated but there is an area where the two are mixed and it is energy poverty. The funds that would be required to make all houses energy efficient is an enormous amount of funding and the question is how we should prioritise it. Therefore it is a useful idea to think about energy poverty also as a way to prioritise the allocation of funds that help energy efficiency because it would have a co-benefit of improving the health of low-income people and easing the pressure on the social systems. He does believe it is a useful concept to have energy poverty as a separate policy.

As far as the causes of energy poverty are concerned, a couple were mentioned in the discussion. It is the energy transition policies, green policies, austerity policies connected with the neo-liberalism, it is also a question of your political standpoint. But even if we leave policies out, for example according to the World Energy Outlook published by the IEA, energy prices are projected to go up, even if we correct for inflation, green policies. And having low income people and low efficiency houses means that these people are more vulnerable to the price increases, which are lastly fully independent from promoting renewable energies. It is also a way to make the society more resilient to price changes of fossil fuels.

The last remark by Mr. Greiner concerned the definition of energy poverty. Of course it is an absurd case that we can call the queen of England energy poor by some definitions. But it is a trade-off between having a simple definition or an elaborate amount of data. Assessing a model takes much more data and more resources and can lead to some side-effects such as the Buckingham Palace case.

**Mr. Ugarte** started with a question whether we can imagine a person with low income that would like to eat a twice amount of the normal person. What do we do? We increase the social help to this person or we try to correct this biological malfunction that does not allow him to function correctly like any other person? Of course, the salary gap is important, it would be better if this person had an income that is 10 times higher than someone else and that is unfair, but it is not what we are analysing now. Let’s think how specific our problem is. Mixing policies is a discussion for politicians but there are more fundamental things, the roots of energy poverty are not necessarily only low income.

The third root of energy poverty, is that energy prices are too high. In the ongoing reform of the electricity sector there are many discussions about how to organise the electricity sector. The first is the flexibility problem: what we do to give more flexibility to the energy system so that it can accommodate more renewable energy. One of the old fashioned solutions is the construction of more gas turbines and combined cycles to act as flexibility option. That in the end makes energy more expensive. So there are other flexibility options that are being discussed and energy efficiency and demand response is one of those. As
already mentioned before the interconnections and energy efficiency are two very good flexibility options that could be included in the electricity sector reform. Energy efficiency is a measure that has bigger impact on price and any little impact on price has an enormous impact on low-income households as the energy expense of those households is more important within the total.

Concerning the specific barriers such as the access to capital Mr. Ugarte reminded that we have to better use available funding such as ERDF, ECF, EFSI, ESF. But also funds that are established for health benefits or safety benefits.

If lower consumption of energy will also have a social benefit of the improved health, why not to use these funds to specific vulnerable houses. As it will reduce the health bill as well. Something like that is already done by “Habiter Mieux” in France, it can be done for elderly people for instance.

Finally, to overcome the information barrier: a good example is the Caritas Stromsparcheck in Germany where they hire unemployed people with some education and train them on energy efficiency for low-income households and those people become auditors of low-income households. They speak the same language, they know how to inform these people and explain that they have to turn their lights off, change their refrigerator. There are many things that are common sense that can be done in a more structural way and this is doable.

Concluding the workshop Mr. Buzek thanked for the excellent speeches and precise answers.
Workshop on
Energy poverty

Organised by: the Policy Department A: Economic and Scientific Policy
for the Committee on Industry, Research and Energy (ITRE)

European Parliament, Brussels
9 November 2016, 9:00 to 10.30
Room: JAN2Q2

AGENDA

9.05 – 9.10 Welcome & Introduction by Jerzy Buzek, Chair of the Workshop

9.10 – 9.25 Energy poverty landscapes in the European Union from an academic perspective
Dr Saska Petrova, the University of Manchester

9.25 – 9.40 Presentation of the results of the study: “How to end energy poverty? Scrutiny of current EU and Member States instruments”
Benjamin Greiner, Öko- Institut Berlin

9.40 – 9.55 Presentation of the results of the study: “Energy Efficiency for Low-Income Households”
Dr. Sergio Ugarte, SQ Consult B.V.

9:55-10:30 Q & A session
ANNEX 2    WORKSHOP BRIEFING PAPER

Energy poverty landscapes in the European Union: an academic perspective

AUTHOR: Saska Petrova (University of Manchester)

1

KEY FINDINGS

- Energy poverty has been defined in different ways, which makes it difficult to assess the total number of people affected by the problem in the European Union
- Estimates range between 50 and 160 million people
- A common definition may help standardize policy and increase political visibility but also runs the danger of erasing social, demographic and regional complexities
- Principal causes of the problem include high energy prices, low incomes and energy efficiency, but forms of infrastructural provision, household energy needs, housing ownership and policy, and the ability to access adequate support also matter
- There is unequivocal evidence to suggest that Southern and Eastern member states are most affected by energy poverty, although the problem is present in a substantial number of Western European countries
- The effect of energy transitions on energy poverty is complex, and depends on pricing, fiscal and public planning policies

1. DEFINING ENERGY POVERTY IN EUROPE

Energy poverty – a condition commonly understood as the inability of a household to secure socially and materially-necessitated levels of energy in the home – is gaining increasing policy and scientific attention across the European Union (EU). It has now entered the official lexicon of mainstream decision-making institutions in the EU, and is firmly integrated in the Third Energy Package as well as the Energy Union Framework.

This paper surveys the significant body of scientific evidence and research on issues of energy poverty in Europe. The focus is on studies that have viewed the issue in an integrated manner – exploring its complex causes and outcomes via a multi-sectoral lens. In this context, the key strand of work has come from the United Kingdom, where it was Brenda Boardman (1991) who first described and publicized the problem in an exhaustive manner.

She understood ‘fuel poverty’ as the inability of a household to afford domestic heating – and other energy services – in cases where it needed to spend more than 10 per cent of its income for this purpose. The 10 per cent figure was derived from a study that showed deprivation to occur when the burden of energy exceeded double the national median (Isherwood & Hancock, 1979). Previous to this, scientific explorations of the problem

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Energy Poverty

poverty were limited (Osbaldeston, 1984; Redmond & Hutton, 2000). More recently, a widely-discussed review undertaken by economist John Hills (2012) provided an extensive exploration of the implications of this definition, proposing the movement towards a ‘Low Cost High Income’ definition. Another academically robust review of the development of fuel poverty definitions in the UK context – and their wider European applicability – has been elaborated by Moore (2012).

It is also worth noting that energy poverty in Europe has often been understood via other terms, such as ‘cold homes’, ‘non-payment’, and ‘energy precariousness’ (Anderson et al., 2012; Lampietti & Meyer, 2002; Wilhite et al., 1996; World Bank, 1999). More recently, Bouzarovski and Petrova (2015) have focused on developing a globally-applicable definition of energy poverty, focusing on the fact that all households who suffer from this form of hardship are in some way unable to participate in the customs and practices that define membership of society – to a level that is both materially necessitated (i.e. deprivation causes ill health) and socially conditioned (because it prevents them from achieving the everyday practices that energy enables). At the same time, Simcock et al (2016) have provided a detailed discussion of how fuel poverty has been interpreted in the UK context, arguing in favour of the need to consider a wider range or energy uses within official and scientific definitions. While discussing the development of European-level understandings Thomson et al. (2016) highlight the need for a common EU definition from three perspectives: recognition (better political visibility); clarification (resolving terminological confusion) and policy synergy (achieving links with other domains). However, Deller (2016) argues that a common EU definition of fuel poverty would be problematic due to considerable variations in energy affordability, and the likely inability of media and decision-making bodies to consider the different strands of evidence that are relevant to the problem. Similar to previous work by Dubois (2012), Deller (2016, p. 18) claims that ‘different metrics, and the concepts that lie behind them, may suit different tasks’.

Table 1: A common energy poverty definition in the EU: pros and cons

<table>
<thead>
<tr>
<th>Arguments in favour of a common EU definition</th>
<th>Arguments against a common EU definition</th>
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<tbody>
<tr>
<td>- Higher political visibility and public awareness</td>
<td>- Energy poverty has multiple components, therefore a common definition will erase complexity</td>
</tr>
<tr>
<td>- Development of a common language around the problem</td>
<td>- Prioritization of only one group of vulnerable people versus others due to targeting inaccuracies</td>
</tr>
<tr>
<td>- Ability to devise standardized statistics and measures</td>
<td>- Inability to incorporate region- and country-specific differences</td>
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<tr>
<td>- Opportunities for integration with different policy domains</td>
<td></td>
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</table>

Sources: (Bouzarovski et al., 2012; Deller, 2016; Fellegi & Fulop, 2012; Healy, 2004; Kapteyn et al., 1988; Thomson et al., 2016)

Presently the lack of a common definition means that there is no official figure about the extent of energy poverty in Europe. Estimates range between 50 and 160 million people depending on the metrics that are used (Bouzarovski, 2013; Maxim et al., 2016; Robić et al., 2015).

The only pan-European measures that are available in this context originate from Eurostat, and the total figure varies depending on the types of statistics and indicators that are chosen (as there are multiple ways of describing and experiencing energy poverty).
2. CAUSES AND CONSEQUENCES OF ENERGY POVERTY IN EUROPE

Understandings of the driving forces of energy poverty in the European context have advanced significantly in the last years. Traditionally, academic research on the subject identified the combination of increasing energy prices, falling household incomes, and living in an energy inefficient home (including poor thermal insulation of the roof, walls and windows; old domestic appliances; inefficient heating systems). It has been argued that poor residential energy efficiency is one of the principal causes for most of the adverse effects of energy poverty, because it leads to low levels of thermal comfort, draughty dwellings, as well as the presence of humidity and mould in the home. Altogether, these conditions result in poor physical and mental health in the short and long term, as well as wider forms of social exclusion (Boardman, 2010; Liddell et al., 2012).

The location of energy poverty drivers at the intersection of incomes, prices and energy efficiency means that this condition is a form of material deprivation that extends beyond income poverty. Maxim et al. (2016) have found that even in countries with low levels of energy poverty, income-poor people can be energy-poor too. For example, in Finland (a country with high levels of energy consumption per capita) the percentage of income poor people who live in inadequately heated homes and have debts for energy bills is two times higher than average. For the countries of Eastern Europe, Bouzarovski (2014) argues that the rise of energy poverty is mostly due to the lack of investment in energy efficiency and the provision of appropriate social welfare in the period since the fall of communism. In the UK and Ireland, it has been demonstrated that the combination of low household incomes and energy inefficient homes has led to record levels of household energy deprivation, despite these two countries’ relatively mild climates (Clinch & Healy, 2004; Liddell et al., 2012). Domestic energy deprivation has also been linked to issues of affordability in other European countries - e.g. high energy prices in Italy (Miniaci et al., 2014) - or inefficient housing that increases energy bills in Austria (Brunner et al., 2013).

More recently, the academic literature has begun to identify a host of additional factors relevant to the rise of energy poverty. Households with above-average energy needs – families with children, pensioners, disabled people – have been shown to be more susceptible to energy poverty (Liddell, 2009; Snell et al., 2015; Wright, 2004). It has also transpired that vulnerable households in post-communist countries (such as Hungary but also the Balkans) often become ‘trapped’ in housing arrangements with inflexible heating systems, underpinned by the inability to switch to a more financially accessible or technically convenient form of energy service provision (Bouzarovski & Tirado Herrero, 2016; Buzar, 2007; Tirado Herrero & Urge-Vorsatz, 2012). Work in this vein has also argued that the lack of adequate domestic energy services is a result of broader inequalities in the governance of the housing stock, often including issues of housing tenure – with households in the private sector being particularly disadvantaged (Ambrose, 2015; Bouzarovski & Cauvain, 2016). Maxim et al (2016) have argued that tenants who do not have regulated rents (but rather pay full market prices) and home owners with mortgages may be more susceptible to energy poverty due to more limited financial opportunities to improve their homes, in comparison with tenants with regulated rents and home owners without mortgages. In addition, they claim that people who live in semi-detached and detached houses are more prone to energy poverty than those who live in terraced houses and flats due to the impact of external walls.

Additional analyses have pointed out that people who live in rural locations as well as the inhabitants of intermediate areas of urbanization have significant difficulties in heating their homes adequately (Thomson & Snell, 2013). The reasons for this may lie in the limited choice of energy fuels, as well as high levels of deprivation in such areas, in addition to poor-housing and limited access to adequate state support (Bouzarovski et al., 2015).
Table 2: Key factors that drive vulnerabilities to energy poverty

<table>
<thead>
<tr>
<th>Factors</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access</td>
<td>Poor availability of energy carriers appropriate to meet household needs.</td>
</tr>
<tr>
<td>Affordability</td>
<td>High ratio between cost of fuels and household incomes, including role of tax systems or assistance schemes. Inability to invest in the construction of new energy infrastructures.</td>
</tr>
<tr>
<td>Flexibility</td>
<td>Inability to move to a form of energy service provision that is appropriate to household needs.</td>
</tr>
<tr>
<td>Energy efficiency</td>
<td>Disproportionately high loss of useful energy during energy conversions in the home.</td>
</tr>
<tr>
<td>Needs</td>
<td>Mismatch between household energy requirements and available energy services; for social, cultural, economic or health reasons.</td>
</tr>
<tr>
<td>Practices</td>
<td>Lack of knowledge about support programmes or ways of using energy efficiently in the home.</td>
</tr>
</tbody>
</table>

Sources: (Bouzarovski & Petrova, 2015)

3. GEOGRAPHICAL EXTENT AND COMPOSITION OF ENERGY POVERTY IN THE CONTEXT OF ENERGY TRANSITIONS

The existence of an ‘energy poverty divide’ within the EU is well established in the academic literature (Bouzarovski & Tirado Herrero, 2016). Thomson and Snell (2013), for instance, have outlined and discussed the prevalence of energy poverty in the context of the accession of former communist states, and increasing fuel prices in the EU. Their analysis rests on EU Statistics on Income and Living Conditions (EU-SILC) survey data, using variables about the self-reported ability to keep the home adequately warm, the presence of poor housing conditions, and arrears in energy bills. It has shown that, while energy poverty occurs across the EU, the prevalence of the condition in Eastern and Southern European states is particularly high. Their findings rely, in part, on an equally weighted model with the three aforementioned variables. It shows that energy poverty levels are the highest in Bulgaria (30.6 per cent), Cyprus (21.2 per cent) and Romania (24.1 per cent).

Numerous academic contributions have emphasized that elevated levels of energy poverty in post-socialist countries can be linked to price increases associated with the liberalization of national energy markets. Using data from based Household Budget Surveys (HBS), Bouzarovski and Tirado Herrero (2016) have shown that domestic energy prices have increased by 33% in Poland, 22% in the Czech Republic and 69% in Hungary between 2006 and 2011. The fact, however, that energy poverty-related indicators do not easily map onto existing regional and demographic economic differences shows that domestic energy deprivation in such states is also affected by additional factors in the domain of housing and social welfare provision.

Levels of energy poverty have also been high in Southern European member states, mostly due to the lack of adequate heating systems, and inefficient housing. Household energy costs in Mediterranean countries are also affected by the need to cool the houses in summer. This is reflected in EU-SILC data, which has shown that approximately one-third of respondents in the eight EU member states bordering the Mediterranean Sea mentioned that they are unable to keep their homes adequately cool in summer. Two-thirds of these households are income poor, and an equal share are above 65 years old. Greece has been
Among the hardest-hit, owing to the economic crisis as well as antecedent forms of poverty (Bouzarovski & Tirado Herrero, 2016; Katsoulakos, 2011; Kolokotsa & Santamouris, 2015) More recently, Maxim et al. (2016) have proposed a Compound Energy Poverty Indicator (CEPI), to express the average affordability of energy at the national level. The testing of the CEPI is based on Eurostat data. Their study shows that Southern and Eastern European countries are among the most affected: **Bulgaria has the highest levels of energy poverty while Sweden has the lowest.** The two authors recognize the limitation of CEPI to detect energy poverty, underpinned by conditions where people avoid talking about the situation due to stigma or because they are just accustomed to the situation.

Of potential relevance to the expansion of energy poverty are energy transitions, marked by the decarbonization of energy systems. These processes can affect low-income households if the costs of low carbon interventions (such as investment in solar and wind renewable energy) are disproportionately borne by end-consumers through energy bills. **The impacts of energy transitions has, however, shown to be affected by location, consumption behaviour and household size rather than income** (Bouzarovski & Tirado Herrero, 2015). Yet there is evidence to suggest that Energiewende-related efforts to increase the energy efficiency of the housing stock in Germany have not led to stable energy prices, and that the process has not been able to provide adequate compensation mechanisms to low-income households affected by the transition (Frondel et al., 2015; Moss, 2014).

A key argument in this vein of work is that the implications of low-carbon transitions depend on the type of fuel or energy carries that has been taxed. Thus, while increased taxes on diesel and petrol - and to a lesser extent natural gas - are overall less negative to the poor, the additional taxation of electricity affects poor households significantly more (Poltimäe & Võrk, 2009). This is especially relevant to households in Central, Eastern and Southern Europe (particularly Greece), where there are limited opportunities to switch to alternative energy carriers. Yet Bouzarovski (2013) supports the argument that universal energy price subsidies are not an efficient tool of redistributing income, because high income households usually consume more energy compared to poorer ones (Dolan, 2013). **Income support via the social welfare system may hence be more effective.** Other indirect methods could include support of public transport, and systemic retrofit of the housing stock. It has been also suggested that low-carbon transitions could be fairer if they were funded from income taxation rather than levies on energy bills (Preston et al., 2010).
Table 3: A geographic typology of energy poverty and transitions

<table>
<thead>
<tr>
<th>Macro region</th>
<th>Western and Northern Europe</th>
<th>Central, Eastern and Southern Europe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socio-demographic extent</td>
<td>Typically concentrated within a limited section of the population with energy affordability problems.</td>
<td>A systemic condition, affecting both low- and middle-income strata.</td>
</tr>
<tr>
<td>Relationship with energy transitions</td>
<td>Energy poor households have been adversely affected by price increases associated with low-carbon energy transitions, but are benefiting from energy efficiency improvements associated with the process.</td>
<td>Dynamics of crisis-induced austerity and post-communist transformation are adding new levels of complexity to the energy poverty implications of low-carbon transitions, which are themselves less pronounced in this region.</td>
</tr>
<tr>
<td>Public recognition</td>
<td>Well-established in the UK and Ireland, officially and widely acknowledged in France. Less visibility in other countries.</td>
<td>Historically limited public recognition, recently rising to the top of the social agenda in austerity-hit countries.</td>
</tr>
</tbody>
</table>

Source: (Bouzarovski & Tirado Herrero, 2015)
REFERENCES


ANNEX 3 SHORT BIOGRAPHIES OF THE EXPERTS

Dr. Saska Petrova

Saska Petrova is a Lecturer at the School of Environment, Education and Development and Director of the MSc in Environmental Governance at the University of Manchester. She is also the Research Coordinator of the Collaboratory for Urban Resilience within the Manchester Urban Institute. Her work focuses on how communities and local people are affected by low-carbon urban transitions. One of her research foci is on energy poverty and vulnerability. She has undertaken research projects in Europe (Greece, the UK, Czech Republic, Hungary, Poland and Macedonia), Africa (South African Republic) and Asia (China). Findings from her research have been integrated in various policy documents and strategies including the UK National Union of Students Welfare and Student Rights Strategy. Saska has published extensively on these issues, including a monograph on Communities in Transition (Routledge, 2014) as well as a number of articles in leading scientific journals such as Environment and Planning A, Urban Studies, Geoforum, Area, Geojournal and Energy Policy. She has been involved in several interdisciplinary research projects funded by the ESRC, EPRSC, Royal Geographical Society, Cheshire Lehmann Fund and Higher Education Academy. She also has an extensive professional background as a public advocate and consultant for a range of government institutions and think tanks.

Mr. Benjamin Greiner

Benjamin Greiner is a trained political scientist with a focus on sustainable development. His main areas of expertise are the politics and economics of climate change, adaptation and international development, and technological transitions. At Öko-Institut since 2014, he has been working on design, assessment, monitoring, and evaluation of abatement policies on the German federal and European level with a focus on the social issues of technological change. He also advises international partners on designing, implementing, and evaluating low-emission development strategies, emissions abatement policies, and climate change adaptation plans. Benjamin holds an M. Sc. in Environment and Development from the London School of Economics and a B. A. in Political Science and Middle Eastern Studies.

Dr. Sergio Ugarte

Sergio Ugarte cumulates more than 25 years of consultancy experience in energy, climate change and sustainability policies and strategies for a large number of public and private clients across Europe and other continents. He is well familiar with challenges and risks in the energy sector and has hands-on experience in overcoming market failure and investment barriers. He has vast knowledge on energy efficiency, industrial low carbon strategies, electricity sector reforms, future energy needs, energy independence and sustainable development. In the past 10 years he has conducted relevant projects for the governments of different Member States, the European Commission (different Directorates) and the ITRE Committee. Sergio has also advised many multinational private energy companies and energy intensive industries on their energy related business strategies. Sergio holds a Doctoral degree in Mechanical Engineering from Northeastern University (USA), where he has been an associate scientist and also member of the external advisory board of the Department of Industrial and Mechanical Engineering. Sergio is a regular speaker in conferences, workshops and occasional lecturer in post-graduate programmes in
EU Universities. He is a very reliable advisor, with a fine ability to discern over a country or region needs, and the advantages and disadvantages of related evolving issues and solutions. His ability to manage large teams and ability to control quality and oversee project delivery of complex and multi-discipline projects has been many times recognised by clients and colleagues.
Energy poverty landscapes in the European Union: an academic perspective

Dr. Saska Petrova
University of Manchester
saska.petrova@manchester.ac.uk

A brief history...

- 1979 - British civil servants identified the issue
- 1991 - Brenda Boardman published her seminal book
- 2001 - Concerns first raised at the EU-level in an ECSC opinion document
- 2003 - Explicit recognition given to household customers in revised gas/electricity market directives
- 2009 - Energy poverty given legal recognition in 3rd energy package
- 2016 – ongoing Energy Union reviews, opportunity to further incorporate energy poverty measures
Defining energy poverty in Europe

*When a household cannot afford domestic heating – and other energy services – in cases where it needed to spend more than 10 per cent of its income (Boardman, 1991)*

The UK definition

*Fuel poverty in England is measured by the Low Income High Costs definition, which considers a household to be in fuel poverty if:*

- they have required fuel costs that are above average (the national median level)
- were they to spend that amount they would be left with a residual income below the official poverty line
Energy poverty

Energy vulnerability

When a household is unable to secure materially- and socially-necessitated levels of domestic energy services (Bouzarovski and Petrova, 2015)

A common energy poverty definition in the EU: pros and cons

<table>
<thead>
<tr>
<th>Arguments in favour of a common EU definition</th>
<th>Arguments against a common EU definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Higher political visibility and public awareness</td>
<td>5. Energy poverty has multiple components, therefore a common definition will erase complexity</td>
</tr>
<tr>
<td>2. Development of a common language around the problem</td>
<td>6. Prioritization of only one group of vulnerable people versus others due to targeting inaccuracies</td>
</tr>
<tr>
<td>3. Ability to devise standardized statistics and measures</td>
<td>7. Inability to incorporate region- and country-specific differences</td>
</tr>
<tr>
<td>4. Opportunities for integration with different policy domains</td>
<td></td>
</tr>
</tbody>
</table>

Sources: (Bouzarovski et al., 2012; Deller, 2016; Fellegi & Fulop, 2012; Healy, 2004; Kapteyn et al., 1988; Thomson et al., 2016)
Key drivers of energy poverty

<table>
<thead>
<tr>
<th>Factors</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access</td>
<td>Poor availability of energy carriers appropriate to meet household needs.</td>
</tr>
<tr>
<td>Affordability</td>
<td>High ratio between cost of fuels and household incomes, including role of</td>
</tr>
<tr>
<td></td>
<td>tax systems or assistance schemes. Inability to invest in the construction</td>
</tr>
<tr>
<td></td>
<td>of new energy infrastructures.</td>
</tr>
<tr>
<td>Flexibility</td>
<td>Inability to move to a form of energy service provision that is appropriate</td>
</tr>
<tr>
<td></td>
<td>to household needs.</td>
</tr>
<tr>
<td>Energy</td>
<td>Disproportionately high loss of useful energy during energy conversions in</td>
</tr>
<tr>
<td>efficiency</td>
<td>the home.</td>
</tr>
<tr>
<td>Needs</td>
<td>Mismatch between household energy requirements and available energy services;</td>
</tr>
<tr>
<td></td>
<td>for social, cultural, economic or health reasons.</td>
</tr>
<tr>
<td>Practices</td>
<td>Lack of knowledge about support programmes or ways of using energy</td>
</tr>
<tr>
<td></td>
<td>efficiently in the home.</td>
</tr>
</tbody>
</table>

Sources: (Bouzarovski & Petrova, 2015)

Geographies of energy poverty in Europe

EU data context:

- No dedicated survey of energy poverty
- The EU Statistics on Income and Living Conditions:
  1) Ability to afford to keep the home warm
  2) Leaking roof, damp, and/or rot in home
  3) Arrears on utility bills in the last 12 months
- The Household Budget Surveys
  - Provides actual expenditure data at national level
  - Not currently standardised across Europe
Energy poverty in the EU

- 52 million + households in EU27 (Thomson, 2015)
- The lack of a common definition means that there is no official figure about the extent of energy poverty in Europe
- Southern and Eastern member states most at risk

Energy poverty in post-socialist CEE

Czech Republic vs Hungary vs Poland

Percentage of households spending more than 20% of their income on domestic energy (equivalised units), 2005-2012

Bouzarovski and Tirado-Herrero (2016)
A geographic typology of energy poverty and transitions

<table>
<thead>
<tr>
<th>Macro region</th>
<th>Western and Northern Europe</th>
<th>Central, Eastern and Southern Europe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public recognition</td>
<td>Well-established in the UK and Ireland, officially and widely acknowledged in France. Less visibility in other countries.</td>
<td>Historically limited public recognition, recently rising to the top of the social agenda in austerity-hit countries.</td>
</tr>
<tr>
<td>Socio-demographic extent</td>
<td>Typically concentrated within a limited section of the population with energy affordability problems.</td>
<td>A systemic condition, affecting both low- and middle-income strata.</td>
</tr>
<tr>
<td>Relationship with energy transitions</td>
<td>Energy poor households have been adversely affected by price increases associated with low-carbon energy transitions, but are benefiting from energy efficiency improvements associated with the process.</td>
<td>Dynamics of crisis-induced austerity and post-communist transformation are adding new levels of complexity to the energy poverty implications of low-carbon transitions, which are themselves less pronounced in this region.</td>
</tr>
<tr>
<td>Principal drivers</td>
<td>Low incomes, high energy prices, inefficient homes, disproportionately high energy needs.</td>
<td>Variable by country. Largely same as Western and Northern Europe but also involving questions of housing tenure and infrastructural access to adequate energy sources.</td>
</tr>
</tbody>
</table>

Source: (Bouzerovski & Tirado Herrero, 2015)

Conclusions

- Energy poverty has been defined in different ways, which makes it difficult to assess the total number of people affected by the problem in the European Union.
- Estimates range between 50 and 160 million people.
- A common definition may help standardize policy and increase political visibility but also runs the danger of erasing social, demographic and regional complexities.
- Principal causes of the problem include high energy prices, low incomes and energy efficiency, but forms of infrastructural provision, household energy needs, housing ownership and policy, and the ability to access adequate support also matter.
- There is unequivocal evidence to suggest that Southern and Eastern member states are most affected by energy poverty, although the problem is present in a substantial number of Western European countries.
- The effect of energy transitions on energy poverty is complex, and depends on pricing, fiscal and public planning policies.
Further readings


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**EVALUATE – Energy Vulnerability and Urban Transitions in Europe** project

[**www.urban-energy.org**](http://www.urban-energy.org)

- Five-year ERC funded project. **2013 – 2018**
- To establish the driving forces of urban energy poverty in the post-socialist states of Eastern and Central Europe
- To determine which types of households are vulnerable to the condition
- Focusing on 4 cities: Skopje, Budapest, Prague, Gdansk.
Thank you!

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Presentation by Mr. Benjamin Greiner

How to end Energy Poverty? Scrutiny of current EU and Member State Instruments

Presentation of study results

Benjamin Greiner
ITRE Workshop on Energy Poverty
Brussels, 9 November 2016

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About the Study
About Us

- Founded in Freiburg, 1977
- Research and consulting in all environmental fields
- Committed to sustainable development

The Team

Katja Hünecke, Project Lead (k.huenecke@oeko.de)
Hannah Förster, Senior Researcher (h.foerster@oeko.de)
Tanja Kenkmann, Senior Researcher (t.kenkmann@oeko.de)
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Benjamin Greiner, Junior Researcher (b.greiner@oeko.de)
Aim of the Study

Commissioned by ITRE, beginning of 2015
- Drivers of fuel poverty
- Survey of current existing policies
- Identifying effective measures
- Identifying bottlenecks
- Suggestions & opportunities for EU action

Methodology

- Explorative study
- Comparative case studies of 8 Member States
- Gathering of economic indicators, building performance, energy costs, and heating requirements
- Expert interviews and publically available reports to assess policy effectiveness
Energy Poverty in Member States

Prevalence of Energy Poverty in Europe

Size of circle: level of energy poverty
Outline of circle: gas prices
(red: high; orange: medium; green: low)
Shading of circle: efficiency of housing stock
(red: poor; orange: medium; green: good)
Blue: no data available on gas prices and/or housing stock efficiency

Case Selection

- Geographically differentiated (North / South)
- Economically differentiated (High income / Low income)
- EU-15 and post-2004 Member States

Selection: ES, EI, FR, UK, IT, PL, BG, EL

Generic First Findings

- Energy prices on the rise in all Member States
- Energy poverty loosely connected to macroeconomic indicators
- Energy poverty acknowledged as problem in most Member States
- Specific policies present in very different forms, but not in all Member States
- Very different track records of policies
Spotlight: Ireland

- Definition via expenditure approach
- 52% of poorest decile of households affected
- Better Energy, Warmer Homes: Funding of efficiency measures
- Household Benefits Package: Earmarked benefits
- Fuel Allowance: Seasonal benefits
- Unorthodox Measures: Better Energy Communities, Oil Stamps Saving Programme

Spotlight: France

- Expenditure definition & a basic right to energy
- 36% of poorest quartile of households affected
- Energy Solidarity Fund: obligations for utility companies
- Social tariffs for electricity & gas
- Habiter Mieux: home improvement scheme, implemented by local authorities
**Spotlight: Bulgaria**

- Steep energy prices, low incomes, outdated building stock
- 50% of population at risk of poverty
- Lack of data and resources

- Heating covered via generic social policy
- Building improvement measures unrelated to poverty

**Spotlight: UK**

- Many buildings with low energy performance
- Over 30% of population outside of England affected
- Elaborate methodology (LIHC) and data collection

- Focus on energy company obligations
- Financial support to low income households
- Further devolvement of implementation in 2017
A closer look at the results

Our Analytical Approach to Policies

Three stages to designing a social policy:

- **Targeting**
  Defining the Fuel Poor

- **Identification**
  Finding the Fuel Poor

- **Implementation**
  Helping Effectively
Challenges: Options for Targeting

- **Expenditure-based:** Simple, but does not take cost-cutting and differences in housing stock into account
- **Low Income, High Costs:** Accommodates for individual differences in heating performance, but enormous demand on building data and labour-intensive
- **Social policy:** No additional policy effort, but very inflexible regarding individual situations

Poverty and Fuel Poverty

- Low Incomes
- Inefficient Housing
**Challenges: Identification**

**Frequently underestimated step in policy**

Difficult due to

- lack of detailed data about housing
- stigma of receiving benefits

Positive: Implementation by local or neighbourhood authorities (FR, UK)

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**Results matrix**

<table>
<thead>
<tr>
<th>Problem Definition</th>
<th>IE</th>
<th>FR</th>
<th>UK</th>
<th>EL</th>
<th>IT</th>
<th>ES</th>
<th>BG</th>
<th>PL</th>
<th>EU</th>
</tr>
</thead>
<tbody>
<tr>
<td>National definition for Energy Poverty</td>
<td>yes</td>
<td>yes</td>
<td>neutral</td>
<td>neutral</td>
<td>neutral</td>
<td>neutral</td>
<td>neutral</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Data collection and investigation</td>
<td>yes</td>
<td>yes</td>
<td>neutral</td>
<td>neutral</td>
<td>neutral</td>
<td>neutral</td>
<td>neutral</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>National strategy and coordination</td>
<td>yes</td>
<td>yes</td>
<td>neutral</td>
<td>neutral</td>
<td>neutral</td>
<td>neutral</td>
<td>neutral</td>
<td>yes</td>
<td>yes</td>
</tr>
</tbody>
</table>

| Policy Design and Targeting | | |
|-----------------------------|---|
| Definition of target group clear and adequate | neutral | yes | no | yes | no | no | no |
| Short-term or long-term strategy | both | both | short term | short term | short term | short term | market efficiency |

| Identification and Funding | | |
|-----------------------------|---|
| Identification of and awareness among target group | neutral | no | neutral | neutral | neutral | neutral | no |
| Adequate funding for policies | neutral | no | neutral | neutral | no | no | neutral |
| Monitoring, evaluation, transparency | neutral | yes | no | no | no | no | neutral |

| Implementation | | |
|----------------|---|
| Effectiveness of policy | neutral neutral | low level | no | no |
| Long-term improvement of distribution | neutral neutral | no | no | no | no | no | no | no |
Effective Policies (1)

Social electricity and energy tariffs (EL, ES)

**PRO**
- Effective improvement if identification works

**CON**
- Financial pressure on energy suppliers
- Does not tackle root causes

Effective Policies (2)

Support for building renovation (FR, UK)

**PRO**
- Solution to root cause of energy poverty
- Side benefit of energy and emissions savings

**CON**
- Hard to allocate sufficient funds
- Low performance does not equal fuel poverty
Effective Policies (3)

Allowances for energy to low-income households (IT, BG)

**PRO**
- Low administrative burden

**CON**
- May not target fuel poor efficiently
- Does not tackle root causes of low income and building performance

Challenges for Member States in General

1. Availability of data on housing quality
2. Identification of particular fuel poor households
3. Acquisition of sufficient funding
4. Implementation of long-term solutions
4

Recommendations

Options on the EU level

1. Provide standardised and extensive data on building performance, deepen the work of BPIE
2. Strengthen the topic in existing channels, such as Citizens’ Energy Forum
3. European minimum standards for building performance
4. Observing subsidiarity
5. Provide funds via existing means
## Contact

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</tr>
</thead>
<tbody>
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</tr>
</tbody>
</table>
Presentation by Dr. Sergio Ugarte

9 November 2016

Energy Efficiency for Low-Income Households

Analytical study for the ITRE Committee, European Parliament

Presented by:
Dr. Sergio Ugarte – SQ Consult B.V.

SQ Consult B.V. is part of the Sustainable Quality Group

Estimated average investment

Most relevant barriers:
- Informational barriers
- Lack of access to capital
- Split-incentives barrier (landlord-tenant dilemma)
Recommended policy options

1. Define common definitions at EU level to facilitate the design of effective energy efficiency policies and facilitate their monitoring
   - Clear definitions of energy poverty and vulnerable consumers in the EED and EPBD.

2. Target achievement requires addressing all households, including vulnerable ones. Member States to report whether and to what extent all groups of end users are addressed
   - Reporting requirements in the EED and EPBD addressing all household segments and specifying barriers that hamper policies.
   - EED to require MS to include sub-targets in energy efficiency obligation targets.
   - EPBD to increase requirements of minimum energy performance.

3. Design energy efficiency policies to support additional (social or economic) benefits and limit rebound and counterproductive effects
   - EED, EPBD and Labelling Directive request MS to take the multiple benefits of energy efficiency into account in training and education.
   - Member States can pro-actively communicate multi-benefits of energy efficiency and share the lessons learned with other MS.

4. Policy framework to integrate measures that address specific barriers or monitoring requirements for vulnerable households
   - EED and EPBD to address the issue of barriers in their preambles and request MS to include such considerations in their strategy plans for building renovation.
   - EED could include limits to rental rates for buildings with low energy label.
   - EPBD could address informational barriers by requiring energy suppliers to include specific energy efficiency options in end users’ energy bills.
   - EED to request MS to communicate benefits of advanced energy improvements to stakeholders (banks, health insurance companies) that may provide access capital.
Recommended policy options

5. The choice of additional targeted policies is best left to MS
   - MS implement structural programmes to improve energy efficiency with a long term focus in reducing energy poverty. Good examples found in USA and New Zealand.
   - MS policy strategies for renovations to combine energy audits with financial instruments.
   - Implementation of specific measures to be left to the level of local or regional governments.

6. MS to use infrastructure funds from other sectors benefiting from impacts of energy efficiency. MS to tie EE policies to European social or investment funds to enhance policy implementation
   - EED and EPBD to recommend the use of funds related to additional benefits.
   - MS to support development of innovative financing mechanism such as on-bill repayment.
   - MS policies to be tied to European social/investment funds. EC to strengthen streamlining and blending the use of these funds linked to MS strategies.

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Role

Policy departments are research units that provide specialised advice to committees, inter-parliamentary delegations and other parliamentary bodies.

Policy Areas

- Economic and Monetary Affairs
- Employment and Social Affairs
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- Industry, Research and Energy
- Internal Market and Consumer Protection

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