COST Action 16232
European Energy Poverty:
Agenda Co-Creation and Knowledge Innovation
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Working Group 1 Report
Integration - transforming the state of the art on energy poverty

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The aim of Working Group 1 is: (1) to produce a state of the art in energy poverty analysis and policy and (2) to go beyond that state of the art by identifying and working on upcoming challenges in energy poverty research and policy.

The objective of this report is to present the work done by WG1 in the first 17 months of the ENGAGER COST Action on these aspects. The first section presents the place of WG1 in the ENGAGER COST Action and the relations with the activities of other working groups. Sections 2 and 3 present different activities undertaken by WG1 to produce a state of the art in energy poverty research and analysis. These include: the EP-pedia project, which aims at creating a common knowledge base on energy poverty drivers and symptoms in COST countries, and on the state of research on these drivers and symptoms (section 2), and a collective book on energy poverty in post-communist Europe (section 3).

1. Objective of WG1 in relation to the overall Actions Purpose and in relation to the objectives/activities of the other WGs

The main contribution of WG1 in the general perspective of the ENGAGER COST Action is to address certain knowledge gaps in the analysis and research on energy poverty in Europe. While there has been an abundant research for several years on certain countries (for example the UK, Ireland, France…), there is much less research on other countries:

- In recent years, there has been a growing body of research on energy poverty in Southern Europe;
- In Eastern European countries, energy poverty research is still an emerging topic;
- In many other European countries, for example Germany, the Netherlands or Sweden, the concept of energy poverty does not officially exist and is not addressed, despite (measurable) difficulties of some households in these countries, as shown by the work of the European Energy Poverty Observatory.

Therefore, the first objective of WG1 is to gather knowledge on what is already known on energy poverty, on its drivers and symptoms, on approaches to address these in different countries and on policy debates on these issues. By grouping researchers and practitioners from several countries (including those where energy poverty is almost absent in the policy debate), WG1 and the ENGAGER COST Action more generally allow to do this assessment in an unprecedentedly comprehensive manner.

The second objective of WG1 is to go beyond this collection of evidence and knowledge on energy poverty to produce new insights on:

- The general understanding of energy poverty (drivers and symptoms). In the countries where energy poverty has been most studied (UK, Ireland and France), the prevailing approach focuses on energy affordability and on the energy efficiency of homes and of heating equipment, as well as on certain impacts, in particular on health impacts of cold homes. In several other COST countries, energy poverty is viewed through other lenses, related for example to the lack of access of parts of the population to certain heating fuels, or to problems related to the management of infrastructures, like urban heat networks, or to the impacts of excess heat during the summer period.
- What works and what doesn't in methods for addressing energy poverty in different contexts and how insights from approaches adopted in some countries could inform approaches in other countries or contexts.

The activities of WG1 to reach this objective include the development of cooperation on scientific work and exchange of knowledge among researchers and between researchers and practitioners, especially from countries where energy poverty has not been studied in depth so far.

All projects on the Working Group 1 agenda have an inclusive character with regard to the other Working groups, either by their objectives or with regard to the process and the involvement of the members of the other Working Groups.

The EP-Pedia essentially is a matrix that matches various drivers and symptoms of energy poverty to Action Member States. National experts from the Action have been encouraged to complete the matrix[1] with country-specific information in order to have an as thorough as possible coverage of the topics. Moreover, Action members have been encouraged to enlarge contribution to outside experts for issues on which they do not possess expertise. The EP-Pedia is conceived to be an up to date tool to support the creation of transnational and transdisciplinary research teams and to further comparative research within the action through these teams.

The Book on energy poverty in post-communist Europe relates to the EP-Pedia, being an immediate result of this project. Based on their contributions to the EP-Pedia, experts from across the Action have been asked to contribute with a chapter. The aim of the book is to mobilize expertise from across the region in an unprecedented academic/conceptual exercise and to pave the way for further, more detailed research to be assumed across Working Groups, research teams and topics.

More specifically, the relations with the other working groups of the ENGAGER COST Action, can be summarised as follows:

Link with WG2 "Implementation - developing an operational EP framework)": the findings of WG1 on the drivers and symptoms of energy poverty in COST countries can be used as an input for the research done in WG2 on the development of energy poverty indicators that would better reflect the variety of energy poverty situations throughout Europe. Some of the members of WG1 are also active members of WG2 (for

[1] For the detailed matrix, see https://docs.google.com/spreadsheets/d/1-lp-vgnn89X0c7NUf0cH8zvXYEFZfPZg7QL7yrjW3nM/edit?usp=sharing

example members from Portugal and from Germany), with the potential of connecting the activities of both working groups.

Link with WG3 "Dialogues - co-producing emancipatory research and practice": the state of the art on energy poverty research and analysis done by WG1 directly benefits from the input of various contributors which are not only researchers but also practitioners working in the energy poverty field. On the other hand, the outcomes of the work done in WG1 should directly benefit WG3 in the future, nurturing reflections for example on the transferability of good practices.

Link with WG4 "Innovation - introduction path-breaking perspectives to the understanding of EP": there are several linkages between the work of WG1 and WG4. On the one hand, analysing innovation might benefit from having a wider knowledge on existing practices, as well as on factors of success or failure of certain measures in particular contexts. Indeed, innovation in energy poverty does generally not consist in radical innovation as it would be the case in other fields. It is frequently social innovation and results from the combination of new practices with existing mechanisms. The factors of success of such innovations can be context dependent. Therefore, the work on state of the art produced by WG1 might be helpful to analyse innovations in a larger perspective and to assess their transferability to other contexts. In practice, many activities of WG1 and WG4, for example workshops or writing retreats involve members from both WG4 an WG1, and several research collaborations involving members from both working groups have already started.

2. The EP-pedia concept

The goal of EP-pedia is to collectively contribute of the state of the art in energy poverty policy and research. To that aim we have collected input from participants in the Engager COST Action on different issues related to energy poverty in each country. The contributions take the form of short written contributions (2 to 4 pages) that analyse:

- How the issue of EP is addressed in the policy debate,
- A research perspective on the issue,
- Relevant references on the topic in each country.

In spring 2018, we have opened a contribution process, inviting the members of WG1 and more generally the participants in the ENGAGER COST Action to contribute to EP-pedia by writing a short text.

2.1. Objectives and method

For all countries, we have identified a common set of topics, which are either drivers or symptoms of energy poverty. These drivers or symptoms include: energy efficiency of the housing stock, cold homes during the winter period, excess heat in homes during the summer, consumers' access to affordable energy sources, consumers' access to clean energy sources, outdoor air pollution in cities, indoor air pollution caused by inadequate equipment or buildings, infrastructure issues (i.e. state of energy infrastructure / access to technology / smart metering…), affordability of energy for the general population, affordability of energy for specific groups of people, power cuts (disconnections for non-payment), protection of energy consumers, low incomes, social exclusion and transport energy poverty.

In addition, we have added (a) a section on "Perspectives on Energy Poverty in the public debate and in research" for each country and (b) a section on best practices.

Following the exchanges between EP experts from many COST countries at the first ENGAGER conference in March 2018, it appeared that EP can be addressed in many different ways. Even in countries that have no

formal EP concept and that do not publicly debate EP, some issues related to EP can come to the forefront in policy debates. This is the case for example for air pollution in cities in Poland, or for excess heat during the summer in some Southern European countries. Therefore, the goal of the EP-pedia contributions is to show how EP, or each particular driver or symptom has been addressed in the particular context of each country. The questions addressed in each contribution therefore should focus on:

- How the problem is framed in the policy debate of each country
- In which year the issue has been raised first (and by whom)
- Whether it is formally related to energy poverty in the public debate or not

The Google sheet we have set up for the contributors can be accessed under the following link: https://docs.google.com/spreadsheets/d/1-lp-vgnn89X0c7NUf0cH8zvXYEFZfPZg7QL7yrjW3nM/edit?usp=sharing

2.2. Current Progress

As of March 2019, we have identified 17 topics per country, which represent 663 potential contributions (38 countries plus the whole EU, and provided that all topics are relevant in each country).

The 64 contributions we received thus represent 8 percent of the total contributions, to which we can add another 72 promised contributions.

At the end of 2018, there has been a considerable acceleration of the submissions to EP-pedia.
We are very satisfied of this outcome, after only one year of the ENGAGER COST action. However, the number of contributions received does not currently reflect the energy poverty problematics in all countries. We have not received any contribution or promised contribution for the following countries: Albania, Austria, Denmark, Estonia, Finland, Hungary, Iceland, Latvia, Luxembourg, Malta, Montenegro, Slovakia, Slovenia, Sweden, Switzerland, Macedonia and Israel.

2.3. Way forward

To better capture the variety of energy poverty situations and debates regarding the drivers of energy poverty, we would like to collect more contributions on the topics we defined, especially for those countries for which we have not received any contribution.
The ENGAGER COST action is running until November 2021, so we have some time ahead to build a more complete database.

What will we do with EP-pedia?

In the next months, we will continue collecting EP-pedia contributions and elaborate a concept to allow the EP-pedia to be published online. Our short-term goal is to use EP-pedia to develop scientific collaborations among the authors who wish to develop these concepts further. A first collective publication that should result from this initiative is an edited volume on energy poverty in post-communist Europe.

In the longer term, we would like to launch at least another collective book project on the topics covered by EP-pedia.

What can members of the ENGAGER COST Action do with EP-pedia?

EP-pedia allows members of ENGAGER COST to be part of a growing community of experts who are helping to better understand and tackle the issue of energy poverty.

We have set up a Google sheet that allows to follow the progress of EP-pedia in terms of contributions. This sheet is also a great opportunity to find corresponding minds for cooperation in terms of energy poverty research or policy.

Our recommendation for people interested in such cooperation is to go through the table and look for interesting similarities and/or complementarities.

First cooperation projects have already been launched among the community. These include a first paper on "Energy transitions and social inequalities in energy access in Europe: A relational comparison of capabilities" by Françoise Bartiaux, Mara Maretti, Alfredo Cartone, Philipp Biermann and Veneta Krasteva. This paper has been submitted as a contribution to a special issue of the journal Global Transitions. Another cooperation that resulted from the work on EP-pedia is the book project on energy poverty in post-communist Europe (see section 3).

3. The book project on energy poverty in post-communist Europe

The ENAGER COST Action groups a unique set of experts on energy poverty, especially from Eastern European countries. Whereas in the past years, research suggests that energy poverty in Eastern European countries has some specificities which make it distinct from what can be observed in those countries which have been most studied (the UK, Ireland, France and certain Southern European countries). In addition, first contributions we received on EP-pedia show that there are some common points to Eastern European countries, for example higher budget shares for energy, due to lower income levels than in Western European countries and to energy prices that are comparatively high, or difficulties of access to clean and affordable energy sources of parts of the population, especially in rural areas. However, a closer look at this group of countries also suggests that strong national specificities can be identified. The book project, which was launched in January 2019, aims at contributing to the state of the art on energy poverty knowledge with an objective to contributing to the knowledge of the diversity of the current energy poverty landscape in Eastern Europe.

3.1. General concept and methodology

Book title: Perspectives on Energy Poverty in Post-Communist Europe

Editors: Ute Dubois, Anca Sinea, George Jiglau, Philipp Biermann.

Concept description

For the duration of the ENGAGER COST Action, Working group 1 is proposing a series of publications to capture into depth and from diverse perspectives the state of the art on energy poverty across Europe. The fundamental aims of these publications are to organize otherwise scattered information in order to fill in the existing gaps in academic knowledge, to generate more comparative analyses, to merge academic networks and efforts on a topic that is exceptionally interdisciplinary, and to become relevant to policy making.
Publications are based on the continuous contribution of network members to the EP-Pedia platform and are designed to discuss topics and to formulate answer to needs that arise either from within this emerging academic field of study or exogenously from the social, economic and institutional challenges in the field or from the dynamic political changes happening around the world.

What is the difference between EP-Pedia and the book?

EP-pedia is a dynamic online tool, whereas the book is meant to group together the information presented in the EP-Pedia in an analytical way, that is, in order to cover certain subjects for which there is already a theoretic background, but which are sometimes insufficiently covered in literature (for example case studies). Moreover, the book aims at enlarging the field by covering issues that are not yet conceptually framed but need to be. Given these objectives, the book offers space for (1) going into more depth with regard to the issues presented in the EP-Pedia and (2) allowing clear comparison between case studies.

Book contributors

We have issued targeted calls will be issued to groups of experts from the ENGAGER Network based on their specialisation. For chapters/topics that remained uncovered, external experts have been contacted.

3.2. Detailed book concept

The first project, *Perspectives on energy poverty in post-communist Europe*, is based on the concept of energy divide as developed in the literature (Bouzarovski and Tirado Herrero, 2017).
We rely on the premise that all European states (both EU and non-EU) now deal with energy poverty in their national public policies. It is a multifaceted phenomenon that is very specific in every context where it develops. At the European level, it is considered a policy objective of the Energy Union and the "Clean Energy for all Europeans" legislative package and the more recent net-zero emissions objectives.

Nevertheless, there is still a substantial need to harmonise the approaches of energy poverty and to create a common language and a set of standard instruments between scholars (Bouzarovski and Tirado Herrero 2015, Sovacool 2015) and policy-makers, who often enact single-dimensional policies, and at a larger scale, among EU Member States, which hold limited comparative understanding. Beyond the need for conceptual clarity, another significant challenge to deepen the understanding in the field across „spatial patterns" of energy poverty (Boardman 1991, Bouzarovski and Tirado Herrero 2015, Bouzarovski and Petrova 2015). There is still a need to understand the practical variations in the occurrences of energy poverty depending on the various economic, social, to some extent historic and cultural, but also political and institutional contexts and legacies. Moreover, the current literature on energy poverty is developed largely on Western (and, more recently, Southern) contexts and there is still a gap in knowledge and understanding when it comes to Eastern, post-communist contexts.

Geographical scope

This publication aims to bring to the forefront precisely this political region, which is transnational, goes beyond the borders of the European Union and that is not necessarily congruent with the territories of the states as we know them today, but which has a common historic background, being part of the former communist bloc. With their multiple economic and social implications, both the communist roots and the faltering transition period that followed appear to be decisive factors of path-dependency that influence the transition to clean and inclusive economies (Bouzarovski and Tirado Herrero 2015). The aim of this volume is to bring the region together under a unified conceptual framework and this fundamental assumption and to better understand the varieties of energy poverty problems in that region.

The proposed volume will encompass chapters on individual countries or groups of countries - members of the European Union, countries of the former Yugoslavia and the Eastern Partnerships - that hold different statuses in relation to the European Union, or parts of countries, such as is Eastern Germany. This perspective will enable us to understand that energy poverty is a phenomenon that carries undeniable commonalities across a macro-region with a common historical background. Notwithstanding this general fact, across the region countries hold different development statuses due to diverse transitional routes (some are Members of the EU and others are not) but also due to variations in the rhythm and type of

transformations occurring during the transition period or in the shape and impact of the previous communist regimes (Linz and Stepan 1994), or other social, economic or cultural particularities.

Added value of this volume

This analysis will constitute an elaborated argument in favour of the need for a beyond-the-state-level approach. From a theoretical point of view, this justifies comparison. At the level of policy-making and action, this approach justifies the need for cooperation between countries, the development and transfer of tuned good practices. At EU level it can contribute to optimising both policy-making and the development of tools (financial, political, institutional, etc.).

Our scientific contribution

This volume will focus on perspectives on energy poverty in the public and policy debates and in research. In most of the countries the debate on energy poverty is young, research is scarce and specialisation in the field is practically non-existent. If there is any approach to the issue, this is particularly contextualised, being rather related to other national issues, the so-called "proxies", or factors that are recognised in literature to determine energy poverty in some way.
This book will spot how energy poverty, as it is nationally captured, made its way to the public and research agenda of each of the case studies. The main scientific contribution of the book can be described as follows:

1. Pioneer (comparative) research in the region. The aim of this project is to serve as a starting point for and rather lay the ground for further scientific work.
2. Add new thematic categories and new supporting literature
3. Establish connections between events and phenomena and raise awareness with regard to the (possible) impact

Proposed approach for each chapter

Every chapter shall thus grasp national debates that, in a way or another, brought to the forefront of the public debate the inability of households (generally or categories of households) to access and use the needed energy services. Examples of such topics are debates around the liberalisation of the energy market, accounts of cold related mortality, debates regarding the costs of transition to a clean energy, or other topics as exemplified by the EP-pedia categories. If the public discourse was marked by multiple such debates, they should be presented in order of importance, rather than in a chronological order. Each such account shall summarize in a consistent way the controversy, the discursive build-up, identify the stakeholders, but also give account of the reality in the field. For example, if energy poverty emerged in a discussion regarding pollution, one should frame the issue in terms of numbers as completely as possible: how does the residential sector contribute to pollution, what appliances households use, geographic distribution, etc.

Proposed list of countries to be covered in individual chapters (introduction and conclusions to the volume to be added separately):

- Bosnia-Herzegovina
- Bulgaria
- Czech Republic
- Germany (East vs. West)
- Hungary
- Lithuania

- North Macedonia
- Poland
- Romania
- Slovakia
- Slovenia
- Serbia

Proposed length for each chapter: 7.000-10.000 words.

3.3. Writing method

Main idea

Each chapter should focus on how energy poverty (EP) has been captured in the public discourse in each country. The countries covered in this book have in common that their energy and housing systems have been historically influenced by the communist period and are still facing some specific constraints related to that heritage. Also, in all countries included in the project EP is a rather new concept, incoherently employed and with an imprecise understanding. Whereas its specific traits are rather unsystematically captured in literature, our objective is to consolidate/construct the concept of energy poverty for every country by building it up from different pieces. We will, thus, demonstrate that despite the fact that it has not been labelled as such, EP has been there, is rooted in some regional/national causes and that it generates specific outcomes and costs. The pieces we are hinting at are the drivers and/or symptoms of EP, in other words all those factors that hinder households to satisfy the energy services they need at affordable prices. These factors become meaningful once they manifest themselves and generate a social impact. They can become visible on the public agenda through incidents; or rather more established endemic phenomena. These are the "entry gates" for us to discover the more fundamental issue of energy poverty. We will use them in order to arrive at the fundamentals of EP in every case study.

The selection of drivers and symptoms

To this end we will primarily refer to the list of "drivers and symptoms of EP" outlined in the EP-Pedia country matrix. They are based on the existing literature in the field and, therefore, have a consistent academic understructure. These are the following:

- Energy efficiency of the housing stock
- Cold homes during the winter period
- Excess heat in homes during the summer
- Consumers' access to affordable energy sources
- Consumers' access to clean energy sources
- Outdoor air pollution in cities
- Indoor air pollution caused by inadequate equipment or buildings
- Infrastructure issues (i.e. state of energy infrastructure / access to technology / smart metering...)
- Affordability of energy for the general population
- Affordability of energy for specific groups of people
- Power cuts (disconnections for non payment)
- Protection of energy consumers
- Low incomes
- Social exclusion
- Transport energy poverty

Authors will have the freedom to discuss features that go beyond those listed above (for example health), if they shall establish that there are important features, which are strong in their country and have not been listed above. This way authors will contribute to including in the discussion new drivers and symptoms of EP and to adding new supporting literature to the EP-Pedia resource.
How these drivers and/or symptoms arise on the public agenda varies from one country to another. Their manifestations can be incidental (crises, accidents, one-time or recurrent short-term events, such as an electricity price hype) or rather more permanent latent or obvious features (e.g. absence of energy in rural areas). These features should play an important part in our analysis as they make up the "story" of each element we choose to discuss. They help us understand the specificities, commonalities, attitudes, responses, values, expectations, political responses, political tones, etc.

Proposed chapter structure

Chapters will approach each country study in a creative way attempting to build the story around the country-specific face of energy poverty. A possible general structure of the chapters could be the following:

- Section 1 could present the main characteristics of energy poverty in each country (the elements which shape energy poverty in each country and, by doing so, they make the problem of energy poverty specific in comparison to other countries). The idea of this first section is to show that, even if a country has no official energy poverty concept or does not recognise the issue, there are some topics related to energy poverty that are publicly discussed and that we can consider as "entry gates" in the topic of energy poverty.

- Section 2 could explain why we observe these national specificities à these explanations can be related to particular drivers (for example important social inequalities); to some structural factors (for example energy resources available in the country, or markets for heating energy); to the heritage of the past (in particular: to what extent does the post-communist heritage influence the situation today?).

- Section 3 could discuss some implications of what has been presented before, aiming at answering the following questions: What could be the options for alleviating energy poverty in your country? What are the main constraints and/or opportunities (for example: old infrastructures that need to be replaced, policies that distort the market and that make it difficult to address certain issues)? What are the future perspectives regarding energy poverty in relation with energy transitions and climate policies?

3.4. Provisional agenda

- Chapter concept: 21 February 2019: Powerpoint presentation containing all important information in the chapter on the recommended structure
- Draft 0: 15 March 2019. This version will be of approx. 2.000 words long and will incorporate all feedback from the writing retreat, it will also incorporate a 200 word abstract for the chapter
- Sending off Draft 0 to Publisher (TBD, depending on the publisher)
- Draft 1: 30 April 2019: This version should integrate expert input, more research from authors and possible suggestions from the publisher
- May: cross reviewing of the chapters. Each team will have to review one chapter written by another team
- 31 May: comments sent to authors
- Draft 2: Mid-July
- Final Draft: End of July
- Book in print (TBD)

3.5. Abstracts of chapters

3.5.1. Bosnia and Herzegovina

Energy poverty facing a complex technical, economic and constituional context in Bosnia and Herzegovina

Authors: Jasna Hivziefendic (International Burch University, Bosnia and Herzegovina) & Majda Tesanovic (University of Tuzla, Bosnia and Herzegovina)

To understand the problematic of energy poverty in Bosnia and Herzegovina, the specificities of the country need to be considered. Bosnia and Herzegovina is a post-communist and post-war country. War destroyed infrastructure, cities and industries. In comparison with the other countries analysed in this book, Bosnia and Herzegovina has the lowest GDP per capita, the highest level of unemployment, the highest share of rural population, and the lowest share of households with access to clean technologies and fuels for cooking (World Bank Data). The country's population is rapidly ageing due to intensive immigration of its younger citizens. Therefore, energy poverty must be analysed in the larger context of economic and material deprivation faced by parts of the population.

While several factors contribute to high levels of energy poverty, it has received no particular attention as a specific policy issue. Issues of energy consumer protection and more generally the definition of policies in the energy sector are dealt with at the entity level, which is a consequence of the particular institutional structure of the country. For example, there is no definition of vulnerable customers at a national level. But at the entity level, there are legislations which recognize a category of electricity customers that need to be protected.

More generally, energy poverty in Bosnia and Herzegovina needs to be analysed taking into account the institutional specificities of the country and its energy supply infrastructure. At the institutional level, the main legislative responsibility lies in the hands of entities, which have adopted laws in the fields of renewable energy and of cogeneration. At the level of energy supply, the electricity sector is still a state monopoly. In cities, many households are connected to district heating. But both the electricity production and the district heating plants are outdated and inefficient. To decrease energy poverty, major changes would be required. Social care mechanisms should not be the main method to deal with energy poverty-related difficulties. Rather, more fundamental changes would need to be done, ranging from improvements of the legal and institutional framework to energy efficiency improvement and improvements of the awareness on the benefits of energy efficiency for energy poverty alleviation.

3.5.2. Bulgaria

Inconsistencies in policy-making are driving energy poverty in Bulgaria

Authors: Maria Jeliazkova, Duhomir Minev & Veneta Krasteva (Institute for the Study of Societies and Knowledge at Bulgarian Academy of Sciences)

In Bulgaria data about energy, although fragmented and insufficient, depict alarming values. With the EU integration some measures started to be implemented, but political interventions remain fragmentary, piecemeal and political. Data that Bulgaria is simultaneously the EU country with the highest rates of both: (energy) poverty and social inequalities, is quite informative in this regard.

The chapter presents a review, analysis and recommendations in the field of energy poverty in the country. *The first part* depicts main characteristics of the phenomenon in terms of dimensions, trends and affected groups. Direct and indirect public interventions in various related areas that shape the public discourse are outlined. Public debates on energy policy, pollution, health, incomes and so on address inconsistently the problems of energy poverty and could hardly produce useful results. Actors and stakeholders taking part have very different possibilities to influence decision-making and the picture reflects the imbalances in the bargaining power. *The second part* attempts to focus on the roots of this state of affairs. Analysis of the contradictory effects of different policies is provided depicting how some policies do generate energy poverty (like economic and financial policies, welfare policies, etc.) while others (like social assistance) try to alleviate some of their effects. *The third part* considers necessary improvements in the public policies' approach. While changes in national public policies are an obvious necessity, the analysis shows that the country is unlikely to cope alone and that common EU policies in the field of energy poverty could be very helpful.

3.5.3. Czech Republic

Hidden Energy Poverty. The case of the Czech Republic

Authors: Hedvika Koďousková & Lukáš Lehotský (both Masaryk University, Brno, Czech Republic)

The Czech Republic does not seem to be plagued by energy poverty to a large extent. When compared to most of other EU member states, the overall prevalence of energy poverty in the Czech Republic seems to be lower as measured by both expenditure-based (such as 2M indicator; "Hidden Energy Poverty indicator") and consensual indicators ("Inability to keep home adequately warm"; "Arrears on utility bills", see Thomson & Bouzarovski, 2018). The LIHC indicator for 2011 was slightly below that of the UK (around 9 percent for the Czech Republic meaning a very moderate increase when compared to 2006). Some kind of hardship was indicated, however, as the Czech Republic faces difficult circumstances with respect to "energy burden" (percentage of households with the share of energy costs in a household´s total budget above 20 percent), which amounted 11 percent in 2011 (Bouzarovski & Tirado Herrero, 2017).

The previous studies (Bouzarovski & Tirado Herrero, 2017; Karásek & Pojar, 2018), as well as the Czech statistical data (The Czech Statistical Office, 2019; CVVV, 2018), indicate, that the aspects of energy poverty in the country are basically twofold. It has a strong income dimension, socio-demographic and gender component; moreover, it is somehow related to technical characteristics of building stock. Which means that it either affects individual households which are scattered, but still forming a community (e.g. pensioners, a one-person household with dependent children…), or is localized in certain places, such as those occupied by excluded communities. This implies, that energy poverty in the Czech Republic is somehow "hidden", as affected households are harder to find and survey.

There are generally two types of policies, which are designed to address the issue. However, the message of the chapter is that both somehow mistargeted the most energy poverty affected the population.

The first sphere of the policy addressing energy poverty is based on state aid to those in needs. This is disseminated as benefits to individuals, with different types of benefits according to the income deprivation (Karásek & Pojar, 2018). The state is not present in social housing projects and retreated from the domain whatsoever. Thus, there is no government-administered social housing. Thus, any instance of a social housing project is constrained to the activity of municipalities, NGOs or other bodies. This situation created an opening for the emergence of "entrepreneurship with poverty". Housing to deprived people is provided by private house owners, who overcharge their customers for housing services. The dwellings in question are usually in poor and deteriorating conditions, lacking investment. Oftentimes, there is no legal protection of tenants. When tenants experience difficulties with payments, they are kicked off the housing, further

exacerbating their situation. Hence, these people are facing energy poor conditions and have little opportunity to change or affect this situation. This is most pertinent to severely impoverished people, who are not capable of owning a property or rent a more efficient dwelling.

The second type consists of measures, which address the low energy efficiency in the housing stock (Karásek & Pojar, 2018). In fact, there is a large amount of financing available in the Czech Republic for savings measures, mostly based on the availability of European funds (Borshchevska & Lehotský, 2015). This pertains to people who are owning an energy-inefficient property. Measures to achieve efficiency are achieved by using predominantly financial grants (direct subsidies), which are provided as co-financing complementing own investments of grant beneficiaries. The main focal point of implementation is a cost-optimal way of distributing resources and achievement of the largest possible savings in order to comply with the requirements of the Energy Efficiency Directive 2012/27/EU (Sochor, 2017). While this focus seems to perform well from the overall perspective of energy savings, it creates a unique situation for the energy poor.

Since grants are the main vehicle, people, who are below the certain income threshold, have almost no chance of getting a grant for efficiency measure, even partial ones. Grants are formulated in such a way that beneficiaries must provide co-financing for the measure. While this works for the majority of the population, the identified groups are highly disadvantaged in the process. This is the first barrier which is preventing vulnerable groups from accessing benefits of the energy efficiency gains.

Secondly, there is an administrative burden associated with obtaining grants. The grant application procedures across programs are organized in such a manner that grant applicants have to submit project documentation. Schemes like “Green Savings” require that project documentation is prepared by government-approved specialists, and that projects are prepared and using only government-certified materials and appliances. After preparing the proposal, applicants are entitled to receive a grant for project proposal, but again, only as reimbursement. Furthermore, applicants have to navigate through the complex terrain of different support schemes, all of which are different in details, somewhat overlapping, and governed by different bodies. Hence, these administrative upfront costs are further hindering the people, who would benefit from efficiency gains the most.

Therefore, even though energy poverty is not severe and constrained to smaller groups of people, policies in place do not mitigate the phenomenon, but rather facilitate the growth of inequalities and reinforce the structural nature of the energy poverty in the Czech Republic.

3.5.4. Hungary

Trapped in politics: energy poverty in Hungary

Authors: Nora Feldmar (Apro’tech, Hungary) & Anna Zsofia Bajomi (PhD candidate, Politecnico Di Milano, Italy)

Over the last years, the Hungarian government strongly intervened on the residential energy market by issuing a number of measures regarding utility price cuts and caps, in the larger context of politically well-marketed policies targeting Hungarian families. Despite this, there is evidence that the impact of these measure is marginal and rather harmful. Families with the lowest incomes, which are most effected by energy poverty, are systematically being left out, as they benefit little from the enacted measures. The chapter aims to offer an understanding of the larger structural and social causes that are shaping energy poverty in Hungary, with due regard to the specific post-communist and post-transition traits, and how public interventions are failing to target energy poor households by disregarding them.

The chapter will open with a description of the state of affairs in Hungary and how energy poverty has become instrumental to a political discourse marked by populist tendencies and a voter-focused agenda. Further on, it looks into the Hungarian energy market, housing and the social dimension of energy poverty and discusses how their specific post-communist, post-transition components make energy poverty intervention so complex. The energy market, infrastructure and energy consumption patterns materialize in an uneven access to energy and a lack of affordable and efficient heating methods. Also, a focus will be put on solid fuels as a widely used energy source among low-income families, especially as it leads to considerable health and environmental costs. A further section will be dedicated to growing inequalities and how the deepening poverty, bad housing condition and territorial development differences are important factors of energy poverty in Hungary.

With an eye to how all the above are being absorbed into the public discourse and how different actors (politicians, NGOs, the academia, the private sector) frame the issue, the last part will apprehend how policies and politics are failing to improve the situation of the energy poor while generating harmful redistribution outcomes. This section will also explore the possible future challenges and whether stricter EU regulations will improve the situation or are creating further barriers for lower income groups and other energy poverty stricken categories.

3.5.5. Lithuania

Energy poverty as heating poverty in Lithuania

Author: Lina Murauskaite (Lithuanian Energy Institute, Kaunas, Lithuania)

Whereas Lithuania has made remarkable progress in terms of overall economic performance and of living standards, it is still one of the European countries with the highest levels of energy poverty, with more than 30 percent of households unable to heat their home adequately warm (SILC). In the same time, energy poverty is just starting to be debated as an issue by national policy makers.

In post-communist Europe, Lithuania is characterised a unique combination of policies which resulted in efficiency improvements in the supply of district heating and of persistent inefficiencies of the thermal envelope of buildings.

On the supply-side, the Lithuanian energy system has undergone considerable changes that contributed to limiting energy poverty: since 1990, Lithuania evolved from a country that was heavily reliant on oil and gas imports to a country with diversified energy sources. A central innovation was the transformation of the district heating system, which supplies about 75 percent of the urban population: the system was modernised and switched towards the use of biomass. In parallel, market mechanisms were introduced, both on the biomass exchange market and on district heating market, where district heating plants compete on a monthly basis.

On the demand-side, however, major inefficiencies remain. The multi-family buildings inherited from the soviet era require massive amounts of energy to achieve a satisfactory thermal comfort. The thermal refurbishment of these buildings has been hard to implement, which is due to some extent to a lack of trust of homeowners. Therefore, urban energy poverty has been hard to reduce.

But it is in rural areas that energy poverty is highest, due to a combination of economic and demographic factors. In rural areas, poverty levels are twice as high as in cities and the population dynamic is characterised by both an ageing of population and emigration. Moreover, no district heating networks are supplying these areas, leaving the rural population exposed to high risks of energy poverty.

3.5.6. North Macedonia

Energy Poverty in a subsistence-like economy

Author: Ana Stojilovska (PhD candidate, Central European University, Budapest, Hungary)

Energy poverty in North Macedonia has some characteristics which remind of a subsistence economy. Firstly, a high proportion of households are living in precarious material condition and are facing problems of material deprivation. This translates in into various coping strategies aimed at limiting the financial burden of energy for households. For example, many households are heating only 1 or 2 rooms of their home. These difficulties are wide spread as energy poverty affects not only income poor but also middle-class households (Buzar 2007).

Secondly, energy poverty is affected by the housing ownership and the housing stock characteristics. Over 90% of the households are homeowners and the management of heating and of the thermal efficiency of the home is therefore largely an individual matter. Moreover, a majority of households are living in detached houses with little thermal insulation and therefore the average energy needs are high.

Thirdly, there are few energy sources available for heating in the country. The main heating sources are electricity and fuelwood. In addition, the prices for these energy sources are subsidized. Still, many households are facing energy affordability problems. This has implications both for households and in terms of public policies. For households, the cheapest heating method is burning fuelwood but this has impacts both on thermal comfort and on air pollution. In terms of public policy, the lack of alternative or affordable energy sources is an obstacle to the development of other supply options or infrastructures.

The current situation can be viewed as the outcome of different trends that are characteristic of the post-socialist period. The de-industrialization and loss of international competitiveness of the country have resulted in high unemployment and poverty rates. In the same time, the growing urbanization of the country is leaving some part of the country in a situation of high deprivation. This goes together with a degradation of housing caused by a lack of maintenance. Moreover, the housing stock in North Macedonia has to a large extent been built after the 1963 earthquake, at a time when energy efficiency considerations were almost absent. Finally, the supply system inherited from the communist period results in a system of cheap energy where prices still do not reflect the actual costs of energy. For many decades, households have not been used to saving energy, and the heating technologies were inefficient with high energy consumption levels.

The current situation has several implications. Firstly, as energy poverty is dealt with mostly at an individual level, it results in several coping strategies and can lead to further material deprivation of households. Secondly, the negative impacts of energy poverty are visible at a larger level as it results in air pollution problems and has health impacts. Therefore, the social cost of energy poverty is visible in many areas.

Finally, this situation implies that a transition to market prices and to low-carbon energy sources in the future energy transitions increases the risk of a further worsening of the situation with energy poverty (Boardman 2010; Bouzarovski and Tirado Herrero 2015). Therefore, limited policy options are available to deal with energy poverty, the magnitude of the problem being huge, and energy prices already being subsidized. This suggests that the country might be durably trapped in energy poverty.

3.5.7. Poland

Energy Poverty between energy paradigms in Poland

Authors: Jakub Sokołowski (Institute for Structural Research, Warsaw, Poland), Damian Zelewski (PhD candidate, Department of Socio-Economic Geography, University of Gdańsk, Poland)

In Poland energy poverty is not well recognized, but the topic is gaining momentum both among politicians and society, as programmes aimed at thermal retrofitting or social measures, like energy benefits, are increasing. But the topic of EP gained more popularity in context of widespread discussion about air pollution, which is a pressing problem in Poland, a country with high consumption of coal for domestic heating. In 2015, the government applied new legal measures to restrict the usage of solid fuels on a regional level. Under these circumstances, social protection programmes became essential.

Energy poverty in Poland is predicated upon a combination of factors, such as low income, high energy expenditure, or low energy efficiency of dwellings. In 2017 in Poland there were about 1.3 million, or 9.8%. energy poor households. Energy poor households mostly live in detached houses built before 1946. They rely on local heating systems fired by conventional fuels. These aspects make up the post-communist face of energy poverty in Poland and shall be discussed within the chapter.

In 2019 new legal instruments for improving energy efficiency were established, but given the complexity of the issue and the deep-rooted causes of energy poverty, it would be too early to appraise their effectiveness. However, based on assumptions that are related to the economic models used, it can be asserted that some of these measures implemented, especially those aimed at air quality protection, can cause adverse effects with regard to energy poverty. The main challenge – both macro- and micro level – is thus the transition from energetics dependent on coal to other solutions.

3.5.8. Romania

Beyond and income based energy poverty relief system in Romania

Author: Anca Sinea (Babes-Bolyai University, Cluj-Napoca, Romania)

Romania is one of the European Member States with the lowest quality of life and highest inequalities. Energy poverty is present in a complexity of aspects. To address the phenomenon, there is a robust relief system in place. Yet, by being designed rather as a social system, it does not deliver in terms of reducing energy poverty. But on the contrary, it perpetuates the *status quo and* the many types of discrimination it produces due to its many *lacunae*.

This chapter describes the current system and its underlying principles while signaling on the way inconsistencies and their very concrete impact. Furthermore, it points out other facets of energy poverty that are not observed by the law, yet they are emerging as issues of energy poverty in the public debate as it becomes increasingly evident that they have an impact on the quality of live of the households. Such aspects are the outdated and insufficient energy infrastructure, the inefficiencies of the building stock and the energy consumption practices, the characteristics of the market, which disregards the consumer as a stakeholder and other liberal market principles, to name a few. All these aspects are endemic and can be traced back to the communist past and the way transition has proceeded.

There are many reasons to believe that the current system needs to be restored to move out of the income-based approach. This change is not one that comes with the great cost of removing a well-established institutional infrastructure, but rather one of philosophy. Beyond an ideally reformulated definition that would integrate all the aspects of energy poverty mentioned above, there is momentum for concrete measures. Some of them being quick fixes, whereas others demand a more strategic approach. Essentially, empowering the local level to steer a phased move from the financial aid mentality to an investment-based

one, while harnessing integrated and locally tailored approaches, should be the driving mindset that would put in motion a system that delivers results.

3.5.9. Slovenia

Slovenia: the central role of NGOs in the emergence of energy poverty as a policy issue

Authors: Tomislav Tkalec (Focus, Slovenia), Lidija Zivcic (Focus, Slovenia)

Energy poverty in Slovenia today is linked to social and economic status of the households and to the poor state of buildings (low energy efficiency, old and unfurnished buildings), but less to liberalization of energy prices as in some post-socialist/communist countries. More recently, the problem of energy poverty has been connected to air pollution, which was strongly embraced by the civil society. The Media are interested in the topic because of several issues: low income households cannot afford normal heating, unsuitable living conditions, possibilities for reducing households' energy costs. The current chapter will point out various issues related to energy poverty in Slovenia.

In the first section issues such as the relation between economic and energy poverty, burning waste, illegal logging, energy vulnerable groups, health issues and other energy poverty related outcomes, cooperation and trust, suboptimal building quality, energy subsidies etc. will be discussed briefly.

The second section will discuss into more depth how energy poverty entered the public debate via a national report on the subject matter and what the substance of this debate was. Also, the civil society is being presented as the main actor that drove forth the discussion on energy poverty in Slovenia. Under these circumstances, we defend the opinion that for the development of substantial solutions to energy poverty, a consistent partnership between the state actors and the civil society needs to take place. The chapter goes on to discuss the importance of other actors to join the discussion on energy poverty. Having this in mind, the section concludes by an analytical review of measures in place and work in progress.

The third section offers the general picture on how the heritage of the communist era has an impact on the energy welfare of the citizens, while discussing issues such as inequality, the quality of the housing stock, energy consumption culture, etc.

The concluding section debates the impact of these aspects on the new energy commitments and challenges of Slovenia, such as the reduction of carbon emissions, the need for data, the integration of policies and the development of more targeted and efficient programs. We also touch upon the need to improve the general welfare of the population and to enhance economic competitiveness in order to help combat energy insufficiency for households.

3.5.10. Slovakia

Social inequalities and regional disparities as the framing trends in energy poverty. Lessons learned from Slovakia

Authors: Dusana Dokupilova (Centre for Social and Psychological Studies, Bratislava, Slovakia) & Richard Filcak (Centre for Social and Psychological Studies, Bratislava, Slovakia)

In Slovakia energy poverty is marked by two important moments: the economic and social reforms accompanied by solid economic growth, which are to a great extend the result of the process of integration in the EU. Despite the improvement social inequalities and regional disparities arose along the way, while general social welfare followed a downwards going trend. Making the labour force more competitive (i.e.,

cheaper) influenced the purchasing power of the households and their ability to invest in energy efficiency measures. These are reflected in the regional disparities

In this context the chapter discusses three main causes of energy poverty: Household welfare, energy efficiency and the quality of policy-making. Specific attention is dedicated to the failure of public policies, as the current situation is largely the result of social reforms and inability of the state to address problems of the inequalities and regional disparities. In the first part of the chapter we describe roots of the problem, including the massive privatization of the housing stock, which has led to a new generation of poor owners and tenants. At the same time, the low quality of the prevailing housing stock, the legal and financial problems that arose over the years and have not been overcome by policies and the failure of cooperation between public and private owners, tenants and landlords are important discussions in the Slovak context. Another problem is the lack of public debate. If it exists, it tends to blame the poor. The problem is often presented as personal responsibility as the State mostly dissociates itself from it. All these result in a housing stock that is in poor condition, whereas there is insufficient social support. Moreover, there is little connection established between energy poverty and climate effects, including deforestation, or little attention given to extreme energy poverty groups such as the Roma.

Having these in mind, the chapter offers a critical review of the legislative state of the art including the challenges and benefits that are associated with EU membership. The discussion is carried out not only to point out the role of the communist heritage in the current state of the art, but also in a comparative perspective with measures developed by other EU Member States with similar issues, to point out the lack of needed cohesion at the EU level on the topic. Given the specific situation in Slovakia, the chapter discusses the importance of targeted, consistent policies, which should be the result of a open and constructive public debate, with the involvement of a variety of stakeholders, while having in mind good practices from elsewhere. Beyond transparency, there is a need of robust indicators and data to help target policies. EU funds come as an important, yet ambitious tool.

3.5.11. Serbia

What to do with an insufficient state in Serbia? A private sector-lead agenda on energy poverty.

Authors: Ana Paraušić (PhD candidate, University of Belgrade, Serbia), Milan Lipovac (University of Belgrade, Serbia)

Various indicators point out that Serbia is more affected by energy poverty than any other country in the region. As there are no official measures in this respect, debate is driven by international organizations, NGOs and within academia, while the discussion is marked by four main directions: income poverty, energy efficiency, environmental protection and the reform of the energy sector.

The chapter touches upon three main issues. First, based on some indicators we address the energy poverty situation in Serbia, the main drivers and effects in a post-communist and post-war environment. The communist heritage and challenges of transition, as they are reflected in the structural factors, the market situation and the socio-economic condition of the households are the prevalent causes of energy poverty in Serbia Secondly, there are a number of obstacles that prevent overcoming current state of affairs in Serbia. The lack of effort made by the state, due to the absence of capacity and understanding for the issue is maybe the most important. Thirdly, the role of private stakeholders in promoting a public debate in the context is being discussed both from an analytical perspective and with regard to how they can engage public decision-makers in a more constructive manner.

3.5.12. East Germany

Author: Philipp Biermann (University of Magdeburg, Germany)

East and West Germany are still different in many ways. Some of those differences are due to the differences in circumstances. But over the last decades, these circumstances converged while in terms of well-being, the convergence did not happen at the same speed. Therefore, the general view in the literature (also empirical evidence) is that East Germany is also different in terms of mentality. These differences are partly caused by the communist legacy. And they seem to be more consistent than the circumstance effects. Therefore, in the chapter I would like to focus on differences in energy use (especially of burning wood) and in the circumstances in terms of energy poverty between East and West Germany. Due to the differences in circumstances it might be the case that there are different types of energy poor in East and West Germany. I am going to analyse differences in the energy poverty rates in East and West Germany and find out how those definitions impact the respective energy poverty rates. I will use the German Socio Economic Panel data for a quantitative overview.

4. Conclusion

After 18 months of existence of the ENGAGER COST Action, several initiatives have been developed by WG1 to elaborate a state of the art on energy poverty policy approaches and research. During this first phase, we have worked on building a basis for international comparisons of energy poverty approaches that go beyond quantitative assessments. By including more qualitative aspects related to policy perceptions of energy poverty-related issues, we concluded that countries do not only differ in energy poverty rates, but also in the manifestation of various aspects of energy poverty.

This should allow to better apprehend the diversity of approaches of energy poverty in COST countries, which goes beyond differences in terms of (factual) energy poverty-related difficulties of households. These approaches can for example be influenced by different national issues that relate to the management of certain infrastructures (for example district heating networks) or to geopolitical considerations of energy security. Our focus on these qualitative aspects should also allow to capture some emerging trends on how energy poverty could be addressed in different countries in a context where taking energy poverty into account is required by EU legislation and in the context of future energy transitions.

The activities of WG1 in the future will aim at consolidating the knowledge base on energy poverty, its drivers and symptoms in COST countries. In the next months, we would like to further develop research collaborations on topics, which will allow improving the current knowledge on energy poverty, especially in those countries where energy poverty is still an emerging topic. This can be done for example through comparative literature reviews, through comparative approaches of good practices (or bad practices) and by more systematically drawing lessons from practitioners' work for energy poverty research and lessons from research for practitioners.

Our goal will be to go beyond the current state of the art by working on topics which have not received much attention so far, for example gender and energy poverty, the right to energy and energy justice, the relations between energy poverty and issues like energy independence, energy security and the role of infrastructures, extreme energy poverty and hidden energy poverty.