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Gender perspective on access to energy in the EU

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POLICY DEPARTMENT C: CITIZENS' RIGHTS AND CONSTITUTIONAL AFFAIRS

WOMEN'S RIGHTS & GENDER EQUALITY

Gender perspective on access to energy in the EU

STUDY

Abstract

This study, commissioned by the European Parliament Policy Department for Citizens' Rights and Constitutional Affairs, presents an overview of the situation within the EU with regard to the way energy poverty is experienced by women and men and explores through a gender lens existing EU legislation and policy to address energy poverty. Interpretation and implementation of EU legislation at national level are also investigated. Possible opportunities to ensure that policies and interventions to address energy poverty are more gender aware are identified and discussed.

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To contact the Policy Department for Citizens' Rights and Constitutional Affairs, or to subscribe to its newsletter please write to:
poldep-citizens@europarl.europa.eu

Research Administrator Responsible

Ms Martina Schonard
Policy Department C: Citizens' Rights and Constitutional Affairs
European Parliament
B-1047 Brussels
E-mail: poldep-citizens@europarl.europa.eu

AUTHOR(S)

Joy CLANCY, University of Twente
Viktoria DASKALOVA, University of Twente
Mariëlle FEENSTRA, University of Twente
Nicolò FRANCESCHELLI, Blomeyer & Sanz
Margarita SANZ, Blomeyer & Sanz

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CONTENTS

CONTENTS 3

EXECUTIVE SUMMARY 6

1. INTRODUCTION 9

1.1 Research objectives 9

1.2 Methodology 11

2. ENERGY POVERTY 13

2.1 Definitions of energy poverty 13

2.2 EU framework for addressing energy poverty 20

3. WHAT ARE GENDER DIMENSIONS OF LIVING WITH ENERGY POVERTY? 25

3.1. The drivers, causes and effects of energy poverty: a conceptual map 26

3.2 Analytical perspectives to gender and energy poverty 28

4. HOW CAN THE EU BEST ADDRESS ENERGY POVERTY IN A GENDER AWARE WAY? 36

4.1 Stimulating gender-sensitive energy poverty policy 36

4.2 Collecting sex-disaggregated data on energy poverty 37

4.4 Engendering energy poverty indicators 39

5. CONCLUSIONS 41

6. RECOMMENDATIONS 44

ANNEX 46

ANNEX 1 - REFERENCES 46

ANNEX 2 – STAKEHOLDERS 50

ANNEX 3 – SURVEY 51

ANNEX 4 – CASE STUDIES COMPARISON 55

ANNEX 5 – CASE STUDIES 58

LIST OF ABBREVIATIONS

COPD	Chronic Obstructive Pulmonary Disease
DG Energy	Directorate General for Energy, European Commission
ECHP	European Community Household Panel
EESC	European Economic and Social Committee
EIGE	European Institute for Gender Equality
EP	European Parliament
EPEE	European fuel Poverty and Energy Efficiency
ESMAP	Energy Sector Management Assistance Program
EU	European Union
EWDs	Excess Winter Deaths
FEMM	European Parliament's Committee on Women's Rights and Gender Equality
IAP	Indoor Air Pollution
MS	Member States
SDG	Sustainable Development Goals
UK	United Kingdom
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate Change
WHO	World Health Organization

LIST OF TABLES

TABLE 1 Objectives, questions and methods **10**

TABLE 2 Energy poverty definitions (Trinonimcs, 2016, P.9-10) **14**

TABLE 3 Percentage of households (by age and sex of head of household) living in energy poverty in Spain **26**

TABLE 4 Average consumption of energy per 100 households in Bulgaria **30**

LIST OF FIGURES

FIGURE 1 Conceptual map of the drivers, causes and effects of energy poverty Trinomics, 2016 **27**

FIGURE 2 Gender gaps operating in the drivers, causes and effects of energy poverty. **27**

FIGURE 3 Proportion of households in fuel poverty and the average fuel poverty gap by ethnicity, 2003-2015. **35**

EXECUTIVE SUMMARY

Energy poverty in Europe is reflected in the more than 54 million people who have difficulty paying their energy bills or have limited access to high quality energy because of low incomes. Uninsulated homes, inefficient appliances (like for heating, cooking, hot water) and high energy prices are main reasons for energy poverty in the European Union. Due to their lower average income, women are at a greater risk of energy poverty than men. If analyzing energy access in the European Union (EU) through a gendered lens, the research paper argues that by developing energy poverty eradication policy, a more gender-equal access to energy services will be established. This paper will start gaining insights into energy poverty as experienced by women and men, mediated by social characteristics, within the European Union. The research indicates which energy poverty indicators are applicable within the context of the EU for ensuring gender aware approaches to addressing energy poverty. These indicators, which reflect the gender imbalance of energy service access, are guiding policy makers in developing energy poverty policies.

In December 2016, the European Parliament (EP) adopted a resolution on access to energy. The EP called for the EU to include a gender dimension in all its energy policies focusing on women with particular needs. This paper presents the research funded by the European Parliament to review through a gender lens existing EU legislation and policy related to addressing energy poverty. The methodology used is a mix of literature review, desk review of policy documents (both on EU and national level) combined with mapping and a case study approach of gender and energy poverty in the EU member states. The detailed case studies of Bulgaria, France, Italy, the Netherlands, Spain, Sweden and the UK are presented in the annex. The findings are combined with the insights from interviews with key informants.

The research paper pursues two aims: first to explore the existing situation within the EU with respect to the way energy poverty is experienced by women and men. In order to explore energy poverty in the EU, the paper summarizes definitions of energy poverty that have been developed by both researchers and public institutions. The second aim of the research paper is to provide concrete recommendations for the EP FEMM Committee to address any identified shortcomings at the EU level related to addressing engendered energy poverty. Here it is important to examine how existing EU legislation is interpreted and implemented at the national level. Also, any initiatives in the case study countries which provide positive examples of addressing issues related to gender and energy poverty are identified. In this context, the study explores the recommendation of a definition of energy poverty which reflects the context across member states but is suitable for cross-comparison, to define indicators of energy poverty to enable tracking of progress and support measures.

Although energy/fuel poverty is existent in all EU-countries, a definition of energy poverty has not been developed yet. The challenge that this poses at the EU level should not be underestimated since it has to encompass a range of factors which are considered to influence whether or not households live in energy poverty such as income, building age and quality as well as taking into account the differences of climate, heating options, ways of assessing income, etc. Much of the early research into energy poverty within the European Union has been aimed at providing a definition – with early work using the term 'fuel poverty' as opposed to 'energy poverty'. With the lack of a pan-European definition of energy poverty, cross-country

comparisons of data are difficult. Moreover, it is argued that the structural causes of energy poverty differ between EU-countries.

Then, the framework of energy poverty within the context of the EU is explored. The condition of energy poverty is recognised within the EU for example in the Third Energy Package of 2009. Concern is expressed in respect of vulnerable groups particularly as relates to the economic crisis and liberalisation of energy markets. The language of these documents tends to be gender neutral e.g. 'consumer'. Therefore, EU initiatives on gender sensitive access to energy are identified. As early as 2008 a study on Monitoring progress towards Gender Equality in the Sixth Framework Programme, had recommended gender sensitive research on energy policies for the most disadvantaged groups in society, which including sex-disaggregated data for monitoring differences in consumer behaviour and energy consumption between women and men.[1]

To understand the importance of addressing energy poverty in a gender-aware way, the gender dimensions of living in energy poverty are described using the conceptual map of the drivers, causes and effects of energy poverty developed by Trinomics (2016). Within this conceptual framework, the gender gaps are identified. There are gender dimensions to the drivers, factors and outcomes of energy. Gender and energy poverty in the EU member states, can be analysed from three interlinked perspectives:

- Economic: e.g. Women with low incomes are disproportionately found as heads of households either as single parent families or, due to their greater longevity than men, living alone at pensionable age.
- Biological/physiological: e.g. Age is a significant factor in dealing with heat and cold stress, with young children and older people being particularly vulnerable. Women are also considered to be more sensitive to ambient temperature than men.
- Socio-cultural: women's energy needs and consumption patterns differ compare to men but also among women, factors like marital status and employment influence energy consumption.

Our evidence suggests that there are two specific actions, which are linked, that can be taken to ensure that policies and interventions to address energy poverty are more gender aware. There is a fundamental need to raise awareness about the issues related to gender, as well as other social categories which are intersectional, and energy poverty. In order for gender issues to be more visible it is important to recognise that households are not a holistic entity. The evidence points to households being complex fluid systems with diverse energy needs differentiated not only by income and number of household members. In part, the lack of awareness is linked to the lack of data. Good data is the basis of policy making as well as allowing us to benchmark and track progress. We therefore recommend that Eurostat collects sex-disaggregated data across the European Union on the gender dimension of energy

[1] European Commission, European Research Area, February 2008, Executive Summary of Monitoring progress towards Gender Equality in the Sixth Framework Programme, available at https://ec.europa.eu/research/science-society/document_library/pdf_06/gender-monitoring-studies-synthesis-report_en.pdf

poverty. The data should be presented in an intersectional way to represent a typology of energy users at the household level. In addition, both quantitative data and qualitative data should be collected. The former gives an indication of the scale of the problem while the latter provides insights into the reality of the energy poor.

No data - no visibility; no visibility – no interest; no interest – no action; no action – no accountability (adjusted from Clancy, 2011).

The recommendations for the EP FEMM Committee to address the gender dimension of energy poverty at the EU level, are the following:

1. Develop a more gender aware approach to addressing energy poverty. Due to the complexity and variation in a number of influencing factors across member states we agree with the recommendation by WHO-Europe for national definitions of energy poverty with guidance at the European level on the factors that need to be taken into account. To ensure that the approach to addressing energy poverty is gender aware does not necessarily require special indicators but it does require sex-disaggregated data. Eurostat and the European Institute for Gender Equality (EIGE) could report on sex-disaggregated quantitative and qualitative data on energy poverty.

2. Supporting DG Energy in engendering its approach to energy poverty. The current approach by DG Energy to energy poverty is gender blind and its Vulnerable Consumer Working Group has a very weak understanding of gender. We therefore recommend that a gender specialist, preferably with experience in infrastructure, is seconded to DG Energy in order to mainstream gender into the approach to addressing energy poverty by developing a gender action plan and a methodology for gender mainstreaming.

3. Supporting EIGE to mainstream gender into energy policy. Energy Policy across the European Union can be considered gender blind, although policy makers consider it to be gender neutral – they assume gender equality in benefits from energy access. The European Institute for Gender Equality could play an important role in engendering energy policy at the EU level. A first step could be to include in the next EIGE Index report a section on the energy sector, focusing specifically on energy poverty. The EIGE could also cooperate with the DG Energy gender expert to develop a framework for identifying the gender dimensions of energy policy in Europe.

4. Raising awareness on wood fuel, health and gender in the European Union. There is extensive epidemiological data to link exposure to wood smoke to a number of respiratory and other diseases. But we have a limited understanding of the extent to which households across the European Union are using wood for space heating and cooking. We therefore recommend to undertake urgent research to assess the extent of exposure to indoor air pollution due to cooking and space heating using woodfuel within the European Union and the impact on health.

1. INTRODUCTION

Within Europe, where a significant part of the discussion in the energy sector is dominated by two themes which are interlinked (energy security and climate change promoting the transition to more sustainable energy systems), it is easy to think that the figures cited by the UN of three billion people without access to electricity or cooking on biomass relate to people living in the South. It therefore comes as a surprise to many people in Europe, including politicians, to find that some of these three billion are actually living in Europe. Indeed, Eurostat estimated that Europe counts more than 54 million people who have difficulty paying their energy bills or have limited access to high quality energy[2]. Many are living in uninsulated homes, using inefficient appliances (particularly for heating, cooking, hot water) and with expensive energy bills. There are also households within the European Union (EU) which are using wood for cooking and heating. Due to their lower average income, women are at a greater risk of energy poverty than man. It is possible that it is women who are cooking with wood which potentially has negative health impacts.

If analysing energy access in the EU through a gendered lens, we argue that by developing energy poverty eradication policy, a more gender-equal access to energy services will be established. This paper will start gaining insights into energy poverty as experienced by women and men, mediated by social characteristics, within the EU. The research indicates which energy poverty indicators are applicable within the context of the EU for ensuring gender aware approaches to addressing energy poverty. These indicators, which reflect the gender imbalance of energy service access, are guiding policy makers in developing energy poverty eradication policies.

In December 2016, the European Parliament (EP) adopted a resolution on access to energy. The EP called for the EU to include a gender dimension in all its energy policies focusing on women with particular needs. This research paper presents the research funded by the EP to review through a gender lens existing EU legislation and policy related to addressing energy poverty.

1.1 Research objectives

The research has two main aims. The first is descriptive: to explore the existing situation within the EU with respect to the way energy poverty is experienced by women and men. Here we look at differences between women and men, as mediated by social characteristics such as age, in terms of the causes of energy poverty, the impacts energy poverty has on their lives and their capacities to respond. The role geographical location plays in energy use through the influence on climatic conditions is recognised in the selection of the case studies to represent different climatic conditions in the EU. Existing EU legislation is analysed through a gender lens and the national legislation of the case study countries is assessed, with a focus on whether existing legislation is sufficient to address engendered energy poverty or whether other factors are acting as a barrier.

[2] https://ec.europa.eu/energy/en/news/energy-poverty-may-affect-nearly-11-eu-population

The second aim is providing concrete recommendations for the EP FEMM Committee to address any identified shortcomings at the EU level related to addressing engendered energy poverty. Here it is important to examine how existing EU legislation is interpreted and implemented at the national level. Also, any initiatives in the case study countries which provide positive examples of addressing issues related to gender and energy poverty are identified. In this context, the study explores the recommendation of a definition of energy poverty which reflects the context across member states but is suitable for cross-comparison, to define indicators of energy poverty to enable tracking of progress and support measures.

These two aims are leading to the following set of four objectives and corresponding research questions:

Table 1 - Objectives, questions and methods

RESEARCH OBJECTIVES	RESEARCH QUESTIONS	RESEARCH METHODS
RO1: To gain insights into energy poverty as experienced by women and men, mediated by social characteristics, within the European Union.	RQ1: How is energy poverty experienced by women and men within the EU?	Case Studies Survey Analysis national energy statistics (Desk study) Literature review
RO2: To review through a gender lens existing EU legislation related to addressing energy poverty	RQ2: To what extent is existing EU legislation related to energy poverty gender aware?	Desk study Key informant interviews
RO3: To define indicators of energy poverty applicable within the context of the European Union reflecting the national variations.	RQ3: Which energy poverty indicators are applicable within the context of the EU for ensuring gender aware approaches to addressing energy poverty?	Desk study Key informant interviews
RO4: To provide recommendations on support measures to address energy poverty in a gender equitable way.	RQ4: How can the EU best address energy poverty in a gender aware way?	Key informant interviews Desk study

The report is structured as follows. First, the definitions of energy poverty are summarised, as developed by researchers and state institutions in the EU. Secondly, the EU framework for addressing energy poverty is described and linked to the work of the EU to address gender equality. Then the evidence on the gender and energy poverty is presented. This is followed by an assessment of how the EU can best

address energy poverty in a gender aware way and how energy poverty indicators can be engendered. The report concludes with a summary of our research questions and recommendations.

1.2 Methodology

As a research methodology, literature review and policy analysis is combined with mapping (European Union 28) and case study approach (seven cases). The case studies were deployed in the following sense: 'a focused, in-depth description, analysis, and synthesis of a particular program or other object. (…) It examines beneficiaries' needs and the extent to which the program effectively addressed the needs'.[3] The approach has a strong multidisciplinary element with researchers from different academic backgrounds allowing different perspectives on gender-sensitive access to energy, e.g. economics, law, political sciences etc. The research team is from a range of member states and the case studies were selected based on the background and language skills of the researchers. Policy analysis was conducted based on a systematic review of the academic literature and relevant European Union documentation with the aim both of identifying and researching the current state of play ('*picture of energy access for women and men, particularly considering difference in income levels for the two genders, poor quality social housing that entail higher energy bills, etc'*), and identifying remaining gaps and barriers and specific good practices to effectively address obstacles.

Since the nature of this study is preliminary and descriptive, much of the information is not included in official policy documents and legislation. Gender and energy is a topic not much considered and given ample attention by policy makers and energy planners. This discourse is only recently started with the obligation to achieving the Sustainable Development Goals (SDG's)[4] and improving gender-equality in all policy areas in the European Union. To illustrate our findings in policy analysis, key informants were interviewed to reflect on the gender and energy access. Their experiences, observations and opinions are integrated in our policy recommendations and key findings of this report.

Key respondents: interview and survey

We have aimed to have a balanced mix of academics, decision-makers, policy-makers and stakeholders. Respondents were identified by references in literature and policy documents and through snowballing-technique, asking a respondent who to approach as a key informant. Around twenty-five different stakeholders were consulted during the study (see annex 2 for details).

A preliminary survey to members of the European Institute of Gender Equality (EIGE) Expert Forum was sent out to receive feedback on energy poverty definitions, to identify indicators and to respond to policy recommendations. The EIGE comprises an advisory body, the Expert's Forum, which provides expertise in the field of gender equality. EIGE has a total of 104 people in the management board and in the expert forum.

[3] Stufflebeam, D. (2001) 'Evaluation Models' in New Directions for Evaluation, vol. 2001, 7–98, p. 34

[4] SDG's: Sustainable Development Goals, https://sustainabledevelopment.un.org/sdgs

The survey was launched on 11 September 2017 and was left open for two weeks. The survey was closed on 25 September 2017. The initial number of respondents was very small and we have decided to extend the deadline until 6 October 2017. However, the final response was below statistical relevance[5] and we used the survey results only as additional supportive evidence.

- In the survey, which uses our RQs as a framework, we wanted to obtain some first reactions to the topic of gender-aware energy policy and more specifically a gendered approach towards energy access and energy poverty. Among the questions in the survey were:
- Do you think that men and women experience energy poverty differently? Please explain your answer.
- In your opinion, what are the key characteristics of a gender-aware policy-making?
- How, in your opinion, does that translate to energy policy?
- In your opinion, how effective is each of the following EU actions in terms of alleviating energy poverty in a gender-aware way?

The survey results are provided in annex 3 of this report.

We were considering launching another survey later in the project to validate the same recipients. However, considering the low rate of response, it was not considered meaningful to use a survey to validate findings. Instead, findings were validated via additional desk research / interviews and feedback provided by key informants on the findings of the case studies. The report itself was reviewed by two authorities in the field of gender and energy: Dr. Margit Schratzenstaller and Dr. Cornelia Fraune.

Case studies

To answer our research questions and to contribute to the overall aim of the research, seven case studies were carried out to identify existing initiatives on eradicating energy poverty and improving gender-equal access to energy services. The case studies not only contributed to the overall analysis, but also have proven to be a major source of information concerning the effectiveness of specific interventions. Case study design consisted of (a) selection, (b) data gathering, (c) analysis, (d) validation, and (e) comparison (see annex 4 for case studies comparison).

Seven countries[6] were selected for our case studies: Bulgaria, France, Italy, the Netherlands, Spain, Sweden[7] and UK. Our research team consisted of either nationals from these member states or (close to) native speakers, enabling insight information, network and appropriate language skills to analyse policy documents and project reports in their original language. The geographical spread of the case study countries, reflects the different climate conditions in the EU. From a relatively mild sea climate without severe winters or extremely hot summers but with very humid conditions (France, the Netherlands and the UK), to land climate with cold winters and hot summers (Bulgaria) and including Mediterranean climate with mild winters but hot summers. The seven countries demonstrate a different political background and institutional differences reflected in differences in legislation and policy measurements to eradicate energy poverty and to improve energy policy.

[5] 13,4% of recipients filled the survey.
[6] Annex 5 includes the different case studies.
[7] Sweden was used as a reference case study considering its gender mainstreaming policy.

2. ENERGY POVERTY

2.1 Definitions of energy poverty

An agreed definition of energy poverty has proved elusive and contested. Much of the early research into energy poverty within the EU has been aimed at providing a definition – with early work using the term 'fuel poverty' as opposed to 'energy poverty'. The concepts have different origins and have different focuses. Energy poverty has been largely explored in the context of the Global South where barriers to energy access are linked to poor infrastructure as well as low-incomes resulting in households relying on wood and other forms of biomass which is strongly associated with health issues for women. Fuel poverty has been the term used in the UK and Ireland linked to the causes – low incomes, poor energy efficiency of the housing stock. Table 1 gives an overview of definitions that have been developed for the European context. [NB In this report we use the term 'energy poverty' unless directly citing authors who use 'fuel poverty'.]

Table 2 - Energy poverty definitions (Trinonimcs, 2016, P.9-10)[8]

Author/ Member State (MS)	Definition	Supporting metric	Reference
Bouzarovski (2014)	Energy poverty: Inability of a household to secure a socially- and materially necessitated level of energy services in the home	NA	Bouzarovski (2014)
Slovakia [official]	Energy poverty: Energy poverty under the law No. 250/2012 Coll. of Laws is a status when average monthly expenditures of household on consumption of electricity, gas, heating and hot water production represent a substantial share of average monthly income of the household.	NA	Thomson (2016)
France [official]	Energy Poverty: A person who encounters in his/her accommodation particular difficulties to have enough energy supply to satisfy his/her elementary needs. This being due to the inadequacy of resources or housing conditions.	Three indicators proposed but not operationalised – i) Energy Effort Rate (EER, or TEE in French) (ratio between energy expenses and income of the household), which should not exceed 10%[9], reduced to the first three income deciles; ii) LIHE (BRDE in French) indicator, which considers that a household is in a situation of energy poverty if the two conditions of	ONPE (2014)

[8] In addition to the above definitions, many research initiatives at the European level have assessed different aspects of energy poverty, and applied different definitions e.g. for example, Bouzarovski (2014) under the EVALUATE project. These are not repeated here but can be found in Pye and Dobbins (2015), Table 2, for the ten initiatives reviewed.

[9] In 2006, this ratio was 4.3% taking into account domestic energy use. In 2012, an average household spent an average 1,702 €/year for domestic energy and 1,502 € for fuel, which accounted together for 8.1% of its total spending (Ministère de l'Ecologie, du Développement Durable et de l'Energie, 2014).

Author/ Member State (MS)	Definition	Supporting metric	Reference
		low income and high energy expenditures are met; iii) "Cold Indicator" which relies on testimonials regarding the level of thermal comfort or the extent of budget constraint	
Ireland [official]	Energy poverty is a situation whereby a household is unable to attain an acceptable level of energy services (including heating, lighting, etc.) in the home due to an inability to meet these requirements at an affordable cost.	10% metric – but with higher thresholds to determine severity	DCENR (2014)
Belgium	Energy poverty: Households spend too high a proportion of their disposable income on expenditure for energy	Twice median expenditure threshold used (income equivalised). Only the lower five income deciles are included. Complemented by depth / hidden poverty metrics.	KBF (2015)
	Hidden energy poverty: households have an abnormally low level of spending on energy services	Household's expenditure is below the median expenditure of those households of the same size and type.	
Hills (2012) / England [official]	Fuel poverty: A household i) income is below the poverty line (taking into account energy costs); and ii) their energy costs are higher than is typical for their household type.	LIHC + fuel poverty gap. Income is calculated on an 'after housing costs' basis (deducting mortgage, payments, rent) and equivalised to account for the household composition. Income threshold is below 60% of net median income.	DECC (2013)

Author/ Member State (MS)	Definition	Supporting metric	Reference
Austria	Energy poverty: A household is considered energy poor if its income is below the at-risk-of poverty threshold and, at the same time, it has to cover above average energy costs.	LIHC. At-risk-of-poverty threshold is 60% or less of the median income (equivalised). Above-average costs - either 140% of the median expenses could be considered above average, or fixed at 167% of the median costs.	E-Control (2013)
Cyprus [official]	Energy poverty may relate to the situation of customers who may be in a difficult position because of their low income as indicated by their tax statements in conjunction with their professional status, marital status and specific health conditions and therefore, are unable to respond to the costs for the reasonable needs of the supply of electricity, as these costs represent a significant proportion of their disposable income.	NA	Pye et al. (2015)
Scotland [official]	Fuel poverty: A household, in order to maintain a satisfactory heating regime, it would be required to spend more than 10% of its income (including Housing Benefit or Income Support for Mortgage Interest) on all household fuel use.	Satisfactory heating regime - recommended by the World Health Organisation is 23°C in the living room and 18°C in other rooms, to be achieved for 16 hours in every 24 for households with older people or people with disabilities or chronic illness and 21°C in the living room and 18°C in other rooms for a period of nine hours in every 24 (or 16 in 24 over the weekend) for other households.	Scottish Executive (2002)

Author/ Member State (MS)	Definition	Supporting metric	Reference
Wales [official]	Fuel poverty is defined as having to spend more than 10% of income (including housing benefit) on all household fuel use to maintain a satisfactory heating regime. Where expenditure on all household fuel exceeds 20% of income, households are defined as being in severe fuel poverty.	10% metric. Satisfactory heating regime – as above	Welsh Assembly Government (2010)
Northern Ireland [official]	A household is in fuel poverty if, in order to maintain an acceptable level of temperature throughout the home, the occupants would have to spend more than 10% of their income on all household fuel use.	10% metric. Satisfactory heating regime – as above	DSDNI (2011)

The search for a definition is more than an academic exercise in 'counting angels on a pinhead'. A clear definition is an important foundation for developing indicators to measure baselines and progress to an identified state. The European Economic and Social Committee (EESC) has pressed for such a definition (Bouzaroviski, 2014). The challenge that this poses at the EU level should not be underestimated since it has to encompass a range of factors which are considered to influence whether or not households live in energy poverty such as income, building age and quality as well as taking into account the differences of climate, heating options, ways of assessing income, etc. (European fuel Poverty and Energy Efficiency (EPEE) undated). These factors are further differentiated across and within member states. Indeed, this complex context led to a recommendation from research led by WHO against a pan-European definition of 'fuel poverty', proposing instead national definitions with guidance at the European level on the factors that need to be taken into account (WHO-Europe, 2007). An Intelligent Energy Europe funded project on Fuel Poverty and Energy Efficiency proposed a more general definition of energy poverty which combines a European commonality while allowing for country specific differentiation. According to this definition, energy poverty is a situation 'where a household finds it difficult or impossible to ensure adequate heating in the dwelling at an affordable price' (EPEE undated).

The lack of a clear definition at the EU level makes cross comparison of data difficult. The analysis is made more complex since the structural causes of energy poverty, such as the rate and nature of the energy transition including addressing energy efficiency in the housing stock, between countries are different (Bouzaroviski, 2014). However, we can make some general observations on energy/fuel poverty within the EU. It has been estimated that one in seven households in Europe is in or at the margins of 'fuel poverty' (Bouzaroviski, 2014). Energy/fuel poverty is found in all countries in the EU; it appears that the countries of Eastern / Southern Europe have higher levels than elsewhere. The financial crisis has had a particularly severe impact in Greece where recent research has found that 58% of the population is living in energy poverty (using 10% of income used for energy as the energy poverty threshold) (Papada and Kaliampakos, 2016). Energy poverty is predicted to rise in Europe, including in countries where incomes are rising such as Poland. In 2014, the Commission on 'Clean Energy For All Europeans' reported that the lowest-income households in the EU spent close to 9% of their total expenditure on energy which represents a 50% increase compared to ten years before[10].

In a review of energy poverty research within the EU, Bouzaroviski (2014) concluded that most of the research related to energy poverty has predominantly been in the UK and Ireland. There has been some research in Eastern Europe in the context of electricity and gas prices changes due the move to a market based system while the housing stock is predominantly built in a time of cheaper energy and hence poor insulation and low energy efficiency. There has been very little research related to the Mediterranean countries. There are a few initiatives (for example, in Italy) to address energy poverty. Few researchers have used gender analysis, those that do are mostly confined to single country, small sample size, case studies. These studies do provide insights into the causes of energy poverty and the experiences of women

[10] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee, the Committee of the Regions and the European Investment Bank, 'Clean Energy For All Europeans' COM(2016) 860 final http://eur-lex.europa.eu/resource.html?uri=cellar:fa6ea15b-b7b0-11e6-9e3c-01aa75ed71a1.0001.02/DOC_1&format=PDF

and men living in energy poverty and the responses to initiatives to improve energy efficiency.

The condition of energy poverty is recognised within the EU for example in the Third Energy Package of 2009. Concern is expressed in respect of vulnerable groups particularly as relates to the economic crisis and liberalisation of energy markets. Although interest in problems related to energy and household income can be found as early as 1994, when the European Community Household Panel (ECHP) encouraged Eurostat to compile statistics on being able to keep a home adequately heated/cooled as well as tracking arrears in utility bills and other indicators to show whether or not a household was living with energy deprivation (Bouzarovski and Tirado Herrero, 2014).

Box 1: Measures at the EU level to address energy poverty

- 7/2009: third Energy Package.
- Preamble of the Electricity Directive, calls on MS to develop definitions, elaborate action plans and strategies to tackle energy poverty.
- Natural Gas Directive: similar call to protect vulnerable customers, Member States (MS) to develop appropriate actions such as national action plans, providing social security benefits, providing support for energy efficiency improvements.
- Art 3: sets standards for consumer protection, incl. an Energy ombudsman
- 7/2010: European Economic and Social committee opinion on energy liberalisation
- 11/2010: EC: call on MS to replace direct subsidies for high energy bills with a support for improving the energy quality of the buildings.

EU Cohesion Policy 2014 – 2020: innovation, low-carbon economy, social inclusion

- EU initiatives on gender sensitive access to energy:
- 2008: study on Monitoring progress towards Gender Equality in the Sixth Framework Programme.
- 2012: EIGE Report on Gender Equality and Climate Change.
- 2013: European Union Energy Initiative 'Gender Briefing Notes: Supporting active inclusion of women in energy and development projects'.
- 2014: European Parliament Committee on Women's Rights and Gender Equality, Report on the EU Strategy for equality between women and men post 2015.
- 2016: European Parliament Committee on Women's Rights and Gender Equality issued an opinion for the Committee on Employment and Social Affairs on meeting the antipoverty target.
- 2016: European Parliament resolution of 1 December 2016 on access to energy in developing countries.

- 2016: the European Commission published a Summary Report on the Stakeholder Consultation Meeting on the "Women and Sustainable Energy" Initiative.
- 2017: Call for Proposals on "Women and sustainable energy" to contribute to EU Gender Action Plan, SDG 5, SDG 7 and SE4All.

2.2 EU framework for addressing energy poverty

Energy poverty became part of the vocabulary of the EU institutions when preparing for the Third Energy Package of 2009 (Bouzarovski et al., 2012). In this section we review how energy poverty has been addressed in a number of directives at the European central level related to energy which take energy poverty into account.

The Preamble of the Electricity Directive (2009), calls on member states to develop definitions, elaborate action plans and strategies to tackle energy poverty.[11] Box 2 cites the relevant paragraphs which emphasise the need to protect groups of customers considered to be vulnerable.

Box 2: Preamble of the Electricity Directive (2009)

7. Member States shall take appropriate measures to protect final customers, and shall, in particular, ensure that there are adequate safeguards to protect vulnerable customers. In this context, each Member State shall define the concept of vulnerable customers which may refer to energy poverty and, inter alia, to the prohibition of disconnection of electricity to such customers in critical times. Member States shall ensure that rights and obligations linked to vulnerable customers are applied. In particular, they shall take measures to protect final customers in remote areas. They shall ensure high levels of consumer protection, particularly with respect to transparency regarding contractual terms and conditions, general information and dispute settlement mechanisms. Member States shall ensure that the eligible customer is in fact able easily to switch to a new supplier. As regards at least household customers, those measures shall include those set out in Annex I.8.

8. Member States shall take appropriate measures, such as formulating national energy action plans, providing benefits in social security systems to ensure the necessary electricity supply to vulnerable customers, or providing for support for energy efficiency improvements, to address energy poverty where identified, including in the broader context of poverty. Such measures shall not impede the effective opening of the market set out in Article 33 or market functioning and shall be notified to the Commission, where relevant, in accordance with the provisions of paragraph 15of this Article. Such notification may also include measures taken within the general social security system."

[…]

[11] See paragraphs 7-8 and 53 of the Preamble of Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in electricity and repealing Directive 2003/54/EC [2009] OJ L 211/55.

> 53. Energy poverty is a growing problem in the Community. Member States which are affected, and which have not yet done so should therefore develop national action plans or other appropriate frameworks to tackle energy poverty, aiming at decreasing the number of people suffering such situation. In any event, Member States should ensure the necessary energy supply for vulnerable customers. In doing so, an integrated approach, such as in the framework of social policy, could be used and measures could include social policies or energy efficiency improvements for housing. At the very least, this Directive should allow national policies in favour of vulnerable customers.

These concerns are reflected in the legal provisions of the Directive which includes a universal service obligation (Article 3(3)) with a requirement for member states to protect final customers, particularly vulnerable customers (Article 2 (7)). These provisions are in place to help meet the objectives of social and economic cohesion across the EU.

A similar set of commitments are included in the Natural Gas Directive[12]. The preamble of the Directive incorporates an almost identical set of statements to the Electricity Directive regarding the need to define the concept of vulnerable consumers, from which it may be inferred that these people are living in energy poverty or maybe pushing into it. The Directive states that there is a need to 'formulate national energy action plans, providing social security benefits to ensure the necessary gas supply to vulnerable customers, or providing for support for energy efficiency improvements, [and] to address energy poverty were identified, including in the broader context of poverty.'[13] In 2012, Bouzarovski and his co-researchers had already drawn attention to the concept of 'vulnerable consumers' not being clearly defined and this still appears to the case. In 2016, the EP FEMM Committee issued an opinion for the Committee on Employment and Social Affairs on meeting the anti-poverty target in the light of increasing household costs which suggests that an "EU-wide definition of energy poverty is regretfully lacking, while the phenomenon affects women disproportionately", and calls upon "the Commission and the Member States to establish a definition of energy poverty which takes into account gendered aspects of the phenomenon" and "for more ambitious action to tackle energy poverty, which disproportionately affects single women, single-parent and female-headed households"[14].

In 2016, the 'Clean Energy for all Europeans' package was adopted. The EC has also established a Citizens' Energy Forum, which has been active since 2007[15]. DG Energy has established a Vulnerable Consumer Working Group[16] which, while not making a

[12] Directive 2009/73/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in natural gas and repealing Directive 2003/55/EC [2009] OJ L 211/94. (See paragraphs 3, 4 and 50)

[13] Paragraph 4 of the Preamble of Directive 2009/73/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in natural gas and repealing Directive 2003/55/EC [2009] OJ L 211/94.

[14] European Parliament, Committee on Women's Rights and Gender Equality, P8_TA(2016)0136, Report on meeting the antipoverty target in the light of increasing household costs, available at http://www.europarl.europa.eu/sides/getDoc.do?type=REPORT&reference=A8-2016-0040&language=EN

[15] https://ec.europa.eu/energy/en/events/citizens-energy-forum-london

[16] See https://ec.europa.eu/energy/en/content/vulnerable-consumers-working-group-guidance-document.

specific proposal for a definition of energy poverty, gives criteria for the characteristics of a definition: 'should be **simple**, focus on the problem of **affordability** and allow sufficient **flexibility** to be interpreted according to the particularities of Member States'[17]. In its Working Paper on Energy Poverty, the Working Group suggests that key elements of such a definition would be '**low-income**', '**inability to afford**', '**adequate domestic energy services**'[18]. Member states are requested to prioritise for energy efficiency improvements in households affected by energy poverty and in social housing. Member States will be required to monitor and report on energy poverty. The EC will support member states in addressing energy poverty through the exchange of best practices identified through an Energy Poverty Observatory which will also collect data on the problem and its solutions (Box 3 gives examples from the Vulnerable Consumer Working Group on what constitutes best practice). Also, as part of the strategy to protect vulnerable consumers, the EC has proposed the need for certain procedural safeguards before someone can be disconnected from their energy supply.

The language of these documents tends to be gender neutral e.g. 'consumer'. Although the Vulnerable Consumer Working Group does make reference to a problem for a specific group of women: "older women especially are at greater risk of poverty due to lower pensions". However, the Working Group does not consider gender to be a driver of vulnerability[19]. This lack of attention to gender is in spite of the gender mainstreaming initiatives stimulated by the Beijing Platform for Action which has been ratified by all members states. As early as 2008, a study on Monitoring progress towards Gender Equality in the Sixth Framework Programme, had recommended gender sensitive research on energy policies for the most disadvantaged groups in society, which including sex-disaggregated data for monitoring differences in consumer behaviour and energy consumption between women and men[20].

In 2012, the EIGE published a Report on Gender Equality and Climate Change. The report considers that there are gender differences in the impacts of climate change which also affect the strategies women and men are able to take to adapt to changes. "Due to their lower average income, women are at greater risk of energy poverty than men, and have fewer options for investing in low carbon options such as energy efficiency and renewable energies."[21] The report is also concerned that unless specific actions are taken to support users, particularly economically disadvantaged groups, with adaptive measures, such as purchasing more efficient equipment, these consumers, the majority of whom are women, might become (or remain) energy poor.

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[17] Vulnerable Consumer Working Group (DG Energy), 'Working Paper on Energy Poverty', <https://ec.europa.eu/energy/sites/ener/files/documents/Working%20Paper%20on%20Energy%20Poverty.pdf>, p.3.

[18] Ibid, p.3.

[19] European Commission, November 2013, Vulnerable Consumer Working Group Guidance Document on Vulnerable Consumers, available at http://ec.europa.eu/energy/sites/ener/files/documents/20140106_vulnerable_consumer_report_0.pdf

[20] European Commission, European Research Area, February 2008, Executive Summary of Monitoring progress towards Gender Equality in the Sixth Framework Programme, available at https://ec.europa.eu/research/science-society/document_library/pdf_06/gender-monitoring-studies-synthesis-report_en.pdf

[21] European Institute for Gender Equality, 5th June 2012, Review of the Implementation in the EU of area K of the Beijing Platform for Action: Women and the Environment, Gender Equality and Climate Change, available at http://eige.europa.eu/rdc/eige-publications/gender-equality-and-climate-change-report

The EP FEMM Committee has stressed the need for gender-specific data when conducting impact assessments for women in the areas of climate, environment and energy policy[22]. The Committee's report on the EU Strategy for Equality between women and men post-2015 recognises that, while women are more vulnerable than men to the effects of energy, environment and climate change, they should be seen not only as victims but also as effective actors in relation to mitigation and adaptation strategies. The EP FEMM Committee joined with the Committee on Agriculture and Rural Development in pointing out how the quality of life of women in rural areas is affected by energy provision which influences transport links, and access to high-speed broadband Internet, including mobile data services[23].

Box 3: Vulnerable Consumer Working Group Best Practice Examples for Addressing Energy Poverty24

- Improving household energy efficiency,
- Energy audits and consumer education (with energy tutors),
- Social housing and incentives for tenants and landlords,
- financial support (including special 'winter'/cold weather support), social tariffs,
- 'Payment planning' (essentially waiving late fees, etc.),
- Special protection via energy ombudsmen or consumer groups,
- Promoting competition,
- Fighting unfair commercial practices (such as doorstep selling),
- Promoting awareness of own vulnerability
- Transparency and billing,
- Promoting price comparison tools and switching,
- Possibilities for collective switching,
- Having single point of contact, transparency and information sharing between stakeholders (within the supply chain - regulators, generators and DSOs),
- Active role for energy regulators,
- Measures to prevent disconnection, ensure there is always a supplier (of last resort).

[22] European Parliament, Committee on Women's Rights and Gender Equality, P8_TA(2015)0218, Report on the EU Strategy for equality between women and men post 2015, available at http://www.europarl.europa.eu/sides/getDoc.do?type=REPORT&reference=A8-2015-0163&language=G

[23] European Parliament, Committee on Agriculture and Rural Development and Committee on Women's Rights and Gender Equality, P8_TA(2017)0099, Report on women and their roles in rural areas, available at http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+REPORT+A8-2017-0058+0+DOC+XML+V0//EN

[24] https://ec.europa.eu/energy/sites/ener/files/documents/vcwg-2013_instruments_and_practices_0.pdf

At the national level, in terms of having an official definition of energy poverty, member states fall into three categories - those with a definition, those working on one and those without one. While defining households in energy poverty on a basis of a specified expenditure of household budget is a common component within the existing definitions, there is a move towards focusing on vulnerable consumers. Again, there is no consensus on how to define a vulnerable consumer. In Bulgaria, the definition includes a wide range of categories: persons over 70 years of age, living alone whose sole source of income is their pensions up to the poverty threshold for the respective year, persons with 90 % or more limitation of work ability and who need additional help, families with children with disabilities who rely on additional help, and persons and families who already receive targeted aid for heating according to the law on social welfare. The Czech Republic, The Netherlands, Slovakia and Ireland consider health and disability are key criteria for vulnerability. In Spain and the UK what are considered acceptable ambient temperatures are defined. Italy is currently drafting a national energy strategy which includes 'energy services' which moves the focus from ambient room temperature to a wider range of needs such as cooking.

3. WHAT ARE GENDER DIMENSIONS OF LIVING WITH ENERGY POVERTY?

It has been estimated that one in seven households in Europe is in or at the margins of 'fuel poverty'. Energy poverty is found in all countries in the EU; it appears that the countries of Eastern / Southern Europe have higher levels than elsewhere. However, the structural causes of energy poverty between countries are different. In 2014, the lowest-income households (quintile 1) in the EU spent close to 9% of their total expenditure on energy (COM, 2016). There is a variation across the EU of the percentage of household income devoted to meeting energy needs (excluding transport) ranging from 3% for Malta and 14.5% for Slovakia (COM, 2016). Using a self-reporting subjective metric of energy poverty based on the response to whether the respondent considers that they can afford to keep their household adequately warm, Sweden is considered to have the lowest incidence of energy poverty (1.3%) with Cyprus at 35.2% (Thomson et al., 2017). Energy poverty is predicted to rise in Europe, including in countries where incomes are rising such as Poland. This also affects member states with good income equality such as the Netherlands. In 2009, an estimated 2,6 million Dutch households with a low income spent approximately 9% of their household budget on energy services. The number of households spending more than 10% on energy consumption has increased between 2006 and 2009 by almost 40% (in part linked to the steep rise in energy prices (42%) between 2000 and 2005). In comparison, a high-income household spends between 3% and 4% on energy services.[25]

Understanding who experiences energy poverty, why, in what ways and what are their options and responses has implications for formulating policies aimed at removing energy poverty. However, there is very little data on gender and energy poverty in the EU. In France, an estimate was made by the Commission on Women Rights and Equal Opportunities based on data from the National Agency for Housing (ANAH: Agence Nationale de l'Habitat) that living in energy poverty was more likely to affect single-parent families, and people living alone (often in older age groups). Out of the 5.6 million households who declare being cold in 2013, it was estimated that 38% are women-headed households with or without children. 65% of these women are tenants (with a private owner). More than a third of them are retired or in pre-retirement[26]. One of the few quantitative studies[27] is from Spain (see table 1). The following table[28] shows the percentage of households living in energy poverty in Spain according to the Survey of Family Budget[29] indicators selected by the authors of the study. The data of the Survey of Family Budgets are used to calculate the four indicators described in the table (indicators based on the expense on energy

[25] https://www.nibud.nl/wp-content/uploads/Rapport-2010-Energielastenbeschouwing.pdf

[26] ONPE (2016), Les chiffres clés de la précarité énergétique, Edition 2, November 2016 : http://www.onpe.org/sites/default/files/pdf/tableau_de_bord/chiffres-cles-precarite-energetique-novembre2016.pdf [19/10/2017]

[27] *Pobreza, vulnerabilidad y desigualdad energética. Nuevos enfoques de análisis.* Asociación de Ciencias Ambientales, 2016, p. 44.

[28] Ibid p. 73.

[29] The Survey of Family Budget (Encuesta de Presupuestos Familiares) is prepared on a yearly basis by the National Institute of Statistics of Spain. The survey allows to know the consumption expenses of the households in Spain, as long as the distribution of the expenses between different areas. The survey is fed with information coming from about 24,000 households.

compared to the annual income (>10%, >15%), Low income – high cost (LIHC) and Minimum Income Standard (MIS)).

Table 3 – Percentage of households (by age and sex of head of household) living in energy poverty in Spain

	>10%	>15%	LIHC	MIS
Type of household				
Main person: man ≤ 65 years old	15%	6%	9%	14%
Main person: woman ≤ 65 years old	15%	7%	11%	15%
Main person: woman ≥ 65 years old	26%	12%	7%	7%

3.1. The drivers, causes and effects of energy poverty: a conceptual map

In general, the causes of energy poverty are considered to be a combination of high energy prices, low income and energy inefficient homes (in particular influenced by the age, condition and materials of the building enveloppe and energy efficiency of appliances). However, residential status (owner/tenant) and the heating/cooling system are also factors which influence capacity to invest in improvements. People on low incomes often live in housing with poor insulation and frequently use second hand or old equipment with poor energy efficiency. They often have to pay for their electricity and gas with pre-payment systems which can result in these households being charged at a higher unit cost than households with monthly billing systems.

Figure 1: Conceptual map of the drivers, causes and effects of energy poverty Trinomics, 2016

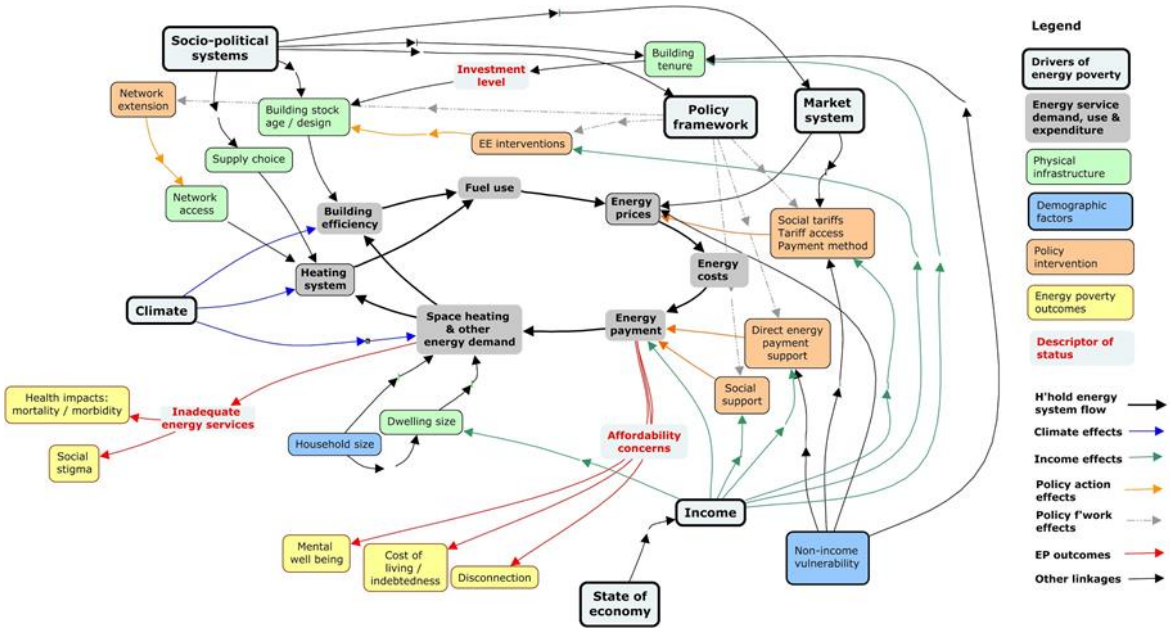


Figure 2: Gender gaps operating in the drivers, causes and effects of energy poverty.

Source: Adapted from Trinomics, 2016

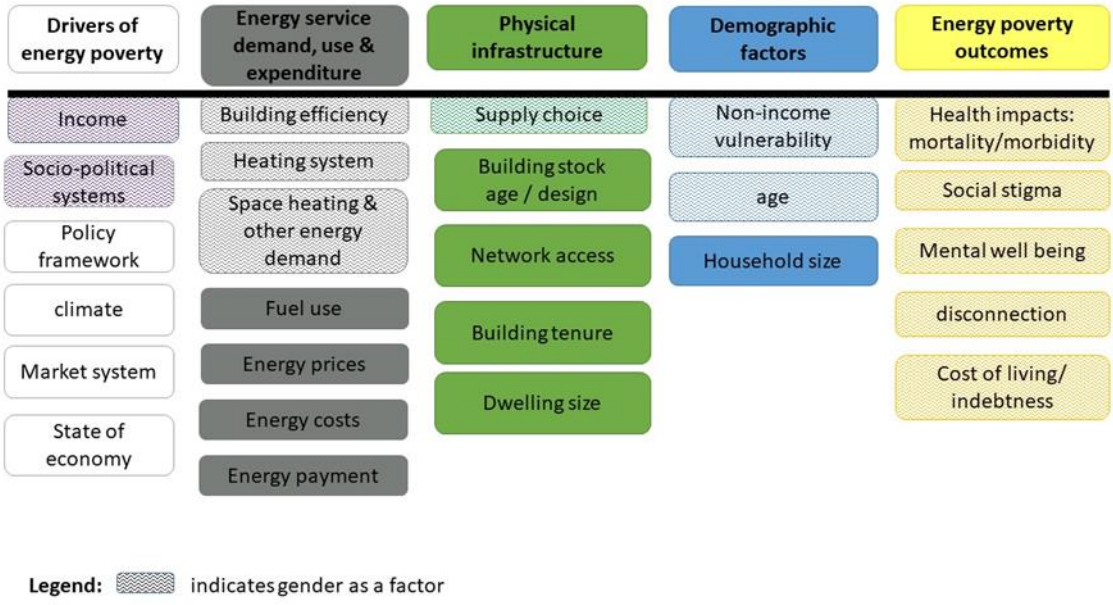


Figure 1 shows a range of different drivers and factors that can be considered to lead to an individual or household living in energy poverty. It consists of the following features, which are described in more detail below:

The household energy system which consists of energy service demand, energy use and expenditure. A range of variables can influence these dimensions. The expenditure level a household can afford on energy and the resultant energy services will reflect affordability. Income is a significant factor influencing expenditure although there are other factors such as expenditure priorities other than energy, and any policy support measures (such as the UK's Winter Fuel Allowance). How much a household can afford influences specific outcomes (indebtedness, disconnection etc.), and lower levels of energy services, which in turn can result in negative outcomes (which we describe below).

Drivers that influence the affordability of household energy services and could lead to energy poverty are both direct and indirect. The previous and current political and economic systems influence energy market development, institutional structures, heating and cooling infrastructure, housing stock and tenure and energy supply. The type of energy market, including the extent of liberalisation and level of competition, influence the range of energy service tariffs / products available, and the type of measures for assisting with energy affordability. Climate influences energy demand, particularly for heating and cooling, which in turn is influenced by the energy efficiency of the building. The Economy has a direct effect on income which in turn affects the type of house, both in terms of tenure and physical structure, an individual or family can afford to live in. The physical structure will have a direct bearing on energy efficiency and affordability of energy services. The policy framework determines whether or not energy poverty is recognised as a political priority and hence whether support will be put in place to address this issue.

Key factors influencing or causing energy poverty, specifically relate to i) physical infrastructure (particularly the building stock) ii) policies that determine the types of measures to support households in energy poverty, and iii) socio-economic & demographic factors (such as the elderly, disabilities, rural communities, single parent households, etc.).

Outcomes. These are (in part) resulting from households being in a situation of energy poverty, such as ill-health. (Trinomics, 2016)

There are gender dimensions to the drivers, factors and outcomes of energy which we show where they operate in Figure 2.

3.2 Analytical perspectives to gender and energy poverty

Gender and energy poverty in the EU member states, can be analysed from three perspectives: economic, biological/physiological, and socio-cultural. These are also interlinked.

3.2.1. Economic perspective

Women with low incomes are disproportionately found as heads of households either as single parent families or, due to their greater longevity than men, living alone at pensionable age. In 2013, in the EU 18.2% of women were living alone as compared to 13.5% of men. The proportion of households composed of women living alone was higher than the corresponding proportion for men in all but one of the EU member states (Luxembourg). People living alone aged 65 and over formed 13.4% of all private households in the EU-28 in 2013. Single parent families were predominantly

headed by women, accounting for 13.4% of all families, compared with 2.6% for households headed by men (EUROSTAT, 2015).

The EIGE gender index recently published gender equality data over the last ten years that demonstrates an existing gender gap in income across all EU member states. In 2014 the gender gap in earnings in the EU-28 was 20%, and nearly twice as high for couples with children and lone parents, pointing to an enduring 'motherhood pay gap' and 'fatherhood premium'. Over the life course, these inequalities lead to increased exposure to poverty for women in old age and a gender pension gap of 40%. The share of the EU population at risk of poverty has slightly increased over the past ten years. 17% of women and 16% of men over the age of 16 are at risk of poverty. A fifth or more of the female population is at risk of poverty in nine Member States. Among women and men born outside the EU, the risk of being in poverty is more than twice as high as among the EU-born population[30].

In the UK it has been estimated that two-thirds of fuel poor homes either "turn off their heat" or "turn it down" to save money (Anderson et al., (2012) cited in Sovacool (2015)). Given the data we present below about behaviour, gender and age, it is not unreasonable to assume that a significant percentage of these will be elderly women. The UK Government introduced in 2000 a package of measures to combat energy poverty. The Warm Front programme[31] targeted households with members considered to be living in or at risk of energy poverty including pregnant women and households with children receiving certain state benefits and households were members were aged 60+. The government drastically scaled back the programme in 2010 at a time when fuel prices began to rise significantly, as a consequence the number of households in fuel poverty has begun to rise again (Sovacool, 2015).

3.2.2. Biological/physiological perspective

European climates create the need for space heating and cooling for significant parts of the year. Age is a significant factor in dealing with heat and cold stress, with young children and older people being particularly vulnerable (Chard and Walker, 2016). In part this is due to physiological reasons linked to the way the body cools but can also be linked, particularly for older people due to lack of mobility and behaviour (cutting down on food intake). Households with members with disabilities or long-term illness can also have special energy needs. Women are also considered to be more sensitive to ambient temperature than men.

This has particular significance since climate change is predicted to see increases in summer temperatures and increase the demand for cooling. Eurostat's Statistics on Income and Living Conditions show that in the eight states bordering the Mediterranean, 30% of the population reported that they are unable to keep their homes adequately cool in summer. 70% of this group are above 65 years of age (Bouzaroviski, 2014). Eurostat data show that 'those countries with the poorest housing (Portugal, Greece, Ireland, UK) demonstrate the highest excess winter mortality' (Healy, 2004). Heating/cooling and cooking for people on low incomes can

[30] EIGE, Gender Equality Index 2017 – Measuring gender equality in the European Union 2005 – 2015, Fig. 18, p. 23

[31] National Audit Office. (2003) Warm Front: helping to combat fuel poverty. London: The Stationery Office. Available at: http://www.nao.org.uk/report/warm-front-helping-to-combat-fuel-poverty/.

National Audit Office (2009) The warm front scheme. London: The Stationery Office. Available at: http://www.nao.org.uk/report/the-warm-front-scheme/.

be problematic if they have a restricted choice of energy forms: electricity is expensive; and solid fuel produces smoke which has negative health impacts.

Wood for cooking and heating is found throughout the EU particularly in Eastern Europe. In Bulgaria, there is evidence of income related back-switching to fuelwood (Bouzaroviski, 2009) which means that families, primarily women who still have the major responsibility for cooking, are exposed to wood smoke (the use of wood should not automatically be associated with income poverty - see below). There is a significant body of epidemiological evidence related to the health impacts of exposure to indoor air pollution from wood, although extensive sex-disaggregated data are less readily available. The data are primarily from developing countries; however, it is a reasonable assumption that these findings would be universally applicable.

Prolonged exposure to Indoor Air Pollution (IAP) is linked to a range of medical conditions including cardiovascular disease, low birth-weights and perinatal mortality, eye diseases including cataracts and blindness, asthma, increased risks of maternal depression, nasopharyngeal and lung cancers, nutritional deficiencies including anaemia and stunted growth, and the exacerbation of the effects of HIV/AIDS (World Bank, 2012). In terms of proven health outcomes due to IAP, it is known that for chronic obstructive pulmonary disease (COPD) and lung cancer women have measurably higher exposure risk ratios and hence higher morbidity. Self-reported data from a three-country study[32], supports the notion that women using solid fuel in households experience a higher incidence of respiratory illness and eye disease than men (World Bank, 2012).

A failure to take a gender perspective risks missing possible differences in exposure levels, and in particular neglects men's exposure to IAP. The kitchen has cultural significance and can be a place where families gather to socialise and to eat together with individual family members being exposed to different levels of IAP. Of the two million annual IAP-related COPD and lung cancer deaths globally, 60% of adult deaths occur in women. However, while the COPD incidence rate for men is lower than for women, the percentage of deaths is actually higher for men due to the higher mortality rates of male COPD sufferers generally because they have additional health problems (World Bank, 2012).

Table 4 – Average consumption of energy per 100 households in Bulgaria

SOURCE: BULGARIAN NATIONAL STATISTICAL INSTITUTE WEBSITE[33]							
	2010	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
Wood (in cubic metres)	261,3	272,1	271,5	224,5	255,6	401,0	386,2

[32] Peru, Senegal and Ghana.
[33] *Data on Average Prices and Bought Quantities of Basic Goods by Households* (translated from Bulgarian)National Statistical Institute, http://www.nsi.bg/bg/content/3271/%D0%BD%D0%B5%D1%85%D1%80%D0%B0%D0%BD%D0%B8%D1%82%D0%B5%D0%BB%D0%BD%D0%B8-%D1%81%D1%82%D0%BE%D0%BA%D0%B8

SOURCE: BULGARIAN NATIONAL STATISTICAL INSTITUTE WEBSITE[33]							
Coal (in kilograms)	21600	21500	23800	14900	16100	14300	15000
Liquid fuels (in litres)	87,0	43,3	38,0	42,3	36,5	20,2	13,3
Electricity (in kWh)	363315	366914	382353	383500	389155	395847	400012
Gas (in litres)	1357,8	1470,7	1270,5	1283,3	1276,7	1864,3	1479,1

In northern temperate climates more people die in the winter months compared to the summer months[34]. There is a recognised link between ambient temperature and excess mortality - although temperature is not the only cause – particularly in cold energy inefficient homes (Boardman, 2010). Data for the UK show that women and the elderly are more prone to excess winter mortality, explained in part by the greater proportion of females aged over 85 compared to males (65% of the population aged 85 and over are female). In England and Wales, of the excess winter deaths (EWDs) in 2015/16, 47% were males (11,400 EWDs) and 53% were females (12,900 EWDs). The direct causes of death are circulatory diseases, respiratory disease and Alzheimer's disease and dementia. In the latter group at least are people who have problems with self-care which could also include regulating ambient temperature. Similarly, there are age and gender differences in deaths related to heat waves. For example, in France, between 1 and 20 August 2003, 15,000 excess deaths were reported (Fouillet et al., 2006). Excess mortality increased at 35 years of age. For people aged 45 and older there was a gender difference in the number of excess deaths of people of comparable age - 15% higher in women than in men. Given that climate change is likely to bring more summer heat waves also in the northern countries of the EU, attention will also be needed in how to reduce ambient temperatures in low-income households particularly for the elderly.

Evidence suggests that people with existing health conditions and disabilities are more susceptible to the effects of insufficient heating (such as, cold, damp or the presence of mould) than people who do not have these conditions (Snell et al., 2015). Snell et al. (2015) cite a substantial body of research which links fuel poverty with a range of mental health issues such as anxiety, stress and depression which are associated with living in poor housing conditions, balancing bills, heating needs and debt. The population identified as energy poor are considered statistically more likely to report poor health and emotional well-being than the population not considered to be energy poor (Thomson et al., 2017).

It might be unwise to place too much reliance on a low percentage of households living in energy poverty indicating a situation that no longer requires the attention of

[34]The UK defines the winter period as December to March, and uses the concept of 'excess winter mortality' which compares the number of deaths that occurred in this winter period with the average number of deaths occurring in the preceding August to November and the following April to July (Office for National Statistics, 2016).

policy makers. Even with Sweden's low figures in respect of households living in energy poverty, there are reported excess winter deaths (3.76%) which is a phenomenon linked to energy poverty (Association for the Conservation of Energy, 2013), and this despite the Mayor of Stockholm's claim that the Nordic countries have eradicated energy poverty (Euractiv, 2017). In addition, Sweden has very large differences in health and well-being outcomes between the energy poor/non energy poor populations, despite being a country with high levels of income equality. A possible explanation lies in the way the data is collected - it is self-reporting in which people are comparing themselves to others. When making comparisons with others who the respondent considers is doing materially better, can have negative impacts on people's emotions, behaviour, mental and physical health (Thomson et al., 2017).

3.2.3. Socio-cultural perspective

Research in Germany has identified differences in attitudes towards energy based on age. Elderly women tend to consume less energy than younger women (EPSECC, 1997). Elderly women save energy by changing their behaviour patterns, for example, cooking less, whereas young women tend to opt for technological options. Preisendoerfer (1999) suggests that these differences in attitudes to energy reduction strategies can be explained by socialisation processes. Women of pensionable age grew up in a time of austerity and based on these experiences they may have undergone a socialisation process which emphasises frugality, and the need for frugality will be re-enforced if they are on low incomes. Younger women have grown up with a greater familiarity with technologies and hence more readily adopt strategies which involve using new pieces of equipment.

From a socio-cultural perspective, women's energy needs and consumption patterns can differ as well. Traditionally, women have been responsible for household chores such as cooking and cleaning which tend to be energy intensive. There appears to be a difference in energy consumption related to marital status and whether or not the woman is in paid employment. In the Netherlands, two-income households (i.e. with a working female partner), used more energy per capita than in households where the female partner did not work or was a working woman living alone (Broek et al., 1997). Measurement of direct electricity consumption as well as indirect energy consumption of female and male single-households for Germany, Norway, Greece and Sweden found that the total energy use is higher for the average single man than for the average single women (Räty and Carlsson-Kanyamaa, 2010).

There is a gender difference in electricity consumption found between single-man households and single-women households in Germany, Norway, Greece and Sweden. It appears that women having a lower level of direct and indirect electricity consumption than men is linked to differences in the level of appliance ownership (Räty and Carlsson-Kanyamaa, 2010). However, other research shows that women headed-households (so with more than one family member) are consuming more energy than male-headed households. This is partly explained by the fact that more female-headed households are living in pre-1970s homes, which are generally less energy efficient (Elsnakat and Gomez 2015).

Social attitudes are also influencing how people experience and respond to energy poverty. A case study in Scotland[35] revealed that people, especially elderly people, feel isolated when living in cold under-heated homes. People are reluctant to invite

[35] Oral presentation Harriët Thompson during the webinar *Global Energy Poverty & Vulnerability.*

guests over because they feel ashamed that they cannot afford heating their homes at a comfortable level, considering this a demonstration of their poverty.

Research in the Netherlands has shown that there are gender differences in motivation for investment in energy efficiency (Tjalma, 2016). Men are more likely to be motivated to invest by environmental reasons, reducing energy wastage and cost-saving. Whereas women are motivated to invest in energy efficiency in order to improve comfort of their homes and to become more independent of utilities. Women are more sensitive to social pressure than men.

There are two qualitative studies undertaken in the UK which provide interesting insights into consumer behaviour and indicate that the 'average' consumer is elusive but certainly gendered. The studies are also instructive in showing that 'a one-size fits all' policy will fail to help all consumers. Sunikka-Blank et al., (forthcoming 2018) shows a distinct difference in behaviour and motivation towards investing in improving energy efficiency between owner occupier and social tenants. For the former they were particularly motivated in making investments that increased the value of their property. In particular, any changes to the physical structure has to be in keeping with any distinctive features of the property. The chosen solution should also reflect the person's concern for environmental issues: being seen to being green. In this context, high-income households can also use woodstoves for space heating since biomass is seen as a renewable energy source (Bouzarovski and Petrova, 2015).

It is not unusual in the UK to find social tenants using prepaid tariff meters which can mean that they are paying a higher rate than other payment methods. (This is the case in Sunikka-Blank and co-researchers' sample). Intervention logic would suggest that this group would have a strong motivation to reduce their energy bills and adopt methods to put that into effect. However, the social tenants had no control over the decisions in respect of the changes made. There appeared to be a mismatch between users' daily experiences, (well-meaning) policy initiatives and designers' aspirations. Tenants didn't prioritise energy - having a safe place to live was more important.

Tenants sometimes had problems understanding how to operate at its optimum the technology they are provided with (so any anticipated energy efficiency gains would not materialise). It seems that it is men who primarily do the household improvements[36]. The women living in social housing found the language used in the manual which explained how to use the new equipment too technical i.e. it did not reflect women's more limited experience with or self-confidence in using unfamiliar technology (which should not be interpreted as 'not interested' or 'not capable').

Another UK case study to understand the way older tenants on low incomes cope with and adapt to trying to keep warm at home at acceptable cost (Rose and Walker, 2016), found that two common coping strategies (among their sample) are putting on extra layers of clothing or going to bed earlier. Respondents did not see these actions as consequences of being poor, but as part of their daily routine when it is cold. It is not seen as a 'problem' whereas to outsiders it is judged as an unacceptable way for members of society to live.

The lesson from this for designing policy and interventions is that there will be people who will not identify themselves as poor (at least by measures of outsiders) and will

[36] This in keeping with the findings of a survey of British attitudes which found that in the UK, it was men in 75 per cent of couple households who undertook small repair jobs (Scott and Clery, 2013). Bell et al. (2015) have similar findings.

therefore not consider that they are in need of help. This group may well resist the acceptance of help. The respondents in the case study also did not see 'energy costs' as a problem they alone faced – so again to try to target vulnerable groups with the message that links support with energy costs may also be overlooked by the group it is designed to help because they will not recognise themselves as 'deserving support'. The UK's Warm Front Programme used that approach not to 'means test' a winter fuel payment but instead to make it automatically payable to anyone born 5th January 1953 irrespective of income. The Warm Front is credited in improving energy efficiency in two million households.

Whilst such a non-discriminatory approach can be criticised on the grounds of economic efficiency in a time of austerity, indeed it is estimated that only around one quarter of the total allocation is spent on energy efficiency improvements. Nevertheless, the UK's Department of Energy and Climate Change, based on their 2012 carbon cost abatement data, found that if we are to mitigate greenhouse gas emissions, a variety of household energy efficiency measures are considered, from a societal perspective, the "cheapest" and "best" investments that can be made (Monzani, (2012) cited in Sovacool (2015)). On the other hand, the likely savings should not be overestimated since there can be a re-bound effect. UK data show that when a home becomes more energy efficient, the greatest increase in ambient temperature occurs in those homes that were the coldest before the cost of keeping warm is reduced. Households feel they are getting better value for money (Boardman, 2010).

Bell et al. (2015) consider that behaviour is a factor in explaining variations in electricity consumption in households of similar composition and living in buildings of similar construction (possibly up to a third of the difference). A household is a fluid entity varying with income, class, ethnicity and education. Divorce creates families across multiple households. Wider social trends such as unemployment and retirement (both groups tend to spend more time at home) and housing costs also influence energy use. The explanation for men doing the energy efficiency improvements is that they are used to working with machines and equipment. However, this does not seem to extend to a capacity to operate washing machines[37]. The washing machine has not reduced women's time spent on laundry since household members own more clothes than previous generations and have higher requirements for frequency of washing. There are also intergenerational tensions related to energy use - in which older household members consider younger members use energy services (such as hot water for showers and electricity for computer use) without regard for the amount of energy they are consuming.

Carlsson-Kanyama and Linden (2007) had similar findings in Sweden to those in the UK. Compared to younger households, older households have few pieces of equipment and are more inclined to switch off appliances when not in use. There were also tensions between neighbours participating in an energy efficiency project when one household considered their neighbours were not doing enough. Women were more sensitive to ambient temperature than men which can lead to a source of tension when deciding whether personal comfort or cost is the determining criterion.

It is women who bear the burden of work to maintain the household (80% of women are involved daily in unpaid household work compared with only 45% of men)

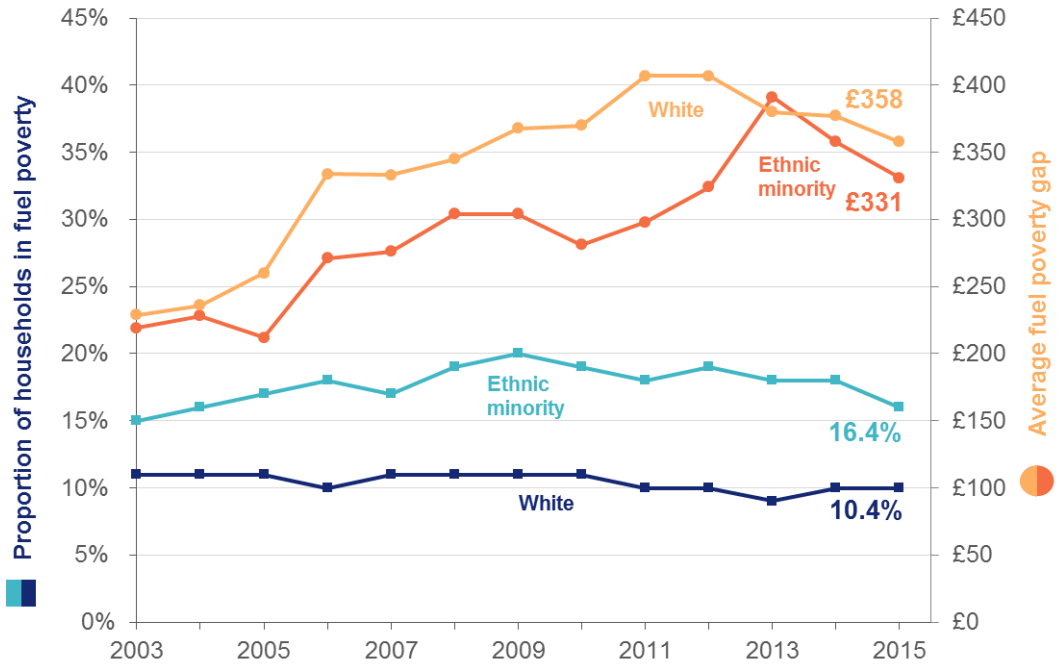
[37] See Scott and Clery (2013) who also report on only a slight increase over 30 years in men taking sole responsibility for the laundry. Even in Sweden, women spend more time on laundry than men (Carlsson-Kanyama and Linden, 2007).

(Brodolini, 2011) which includes ensuring children, elderly and sick family members are comfortable. 'More women heads of household live in older, less efficient homes as evidenced by the data. Pre-1970s homes are predominantly occupied by female head of households' (Elnakat and Gomez, 2015). In Greece women are responsible for energy management in the household which puts them in conflict with other family members - a situation which is exacerbated in times of austerity (Petrova, 2017). Researchers report the same in Sweden (Carlsson-Kanyama and Linden, 2007) and Germany (Roehr, 2001).

The recent increase in migration into the EU creates another group of potentially vulnerable people about whose energy use we know very little. There are recognised cultural differences in energy use, for example, the use of lighting (Carlsson-Kanyama and Linden, 2007). The UK has now at the request of the Prime Minister started to collect data on energy poverty (among other social inclusion indicators) by ethnicity. Of course, some of these households are second or more generation and so cannot be considered as 'migrant'. Nevertheless, they do show that a higher proportion of households from minority communities are living in energy poverty than white households. In 2015, 16.4% of ethnic minority households[38] were living in fuel poverty compared to 10.4% of white households living in fuel poverty.

Figure 3: Proportion of households in fuel poverty and the average fuel poverty gap by ethnicity, 2003-2015.

Data in real terms (2015 prices), adjusting for inflation using the GDP (market prices) deflator. (Source: Department for Business, Energy and Industrial Strategy, 2017).



[38] Classification of the ethnicity of household is based on the household head. This means that this figure cannot be used as a metric for the number of people from ethnic minority backgrounds living in energy poverty since some households will have mixed ethnicity.

4. HOW CAN THE EU BEST ADDRESS ENERGY POVERTY IN A GENDER AWARE WAY?

A national policy should reflect the needs and voices of the citizens in an equal way, being non-discriminative and a representation of all their citizens' needs. To ensure men and women are equally targeted, and benefit from national energy policies, it is essential to acknowledge the differences in gender-relations towards energy. However, national energy policies and DG Energy have a history of being supply-focused. As a consequence, energy policies assume that women and men have the same values, experiences and aspirations towards energy production and use. In other words, energy policies are gender-blind – neglecting gender-based differences in perception, socialisation, values and capacity to respond in making decisions about energy and the impacts energy choices have on lives.

Fraune (2016) questions the assumption that energy policies of industrial countries are gender neutral due to their free-market economy and non-discrimination law. Fraune does not define energy poverty as such, but links differences in energy consumption patterns to social order of income distribution. Gender relations are used as an analytical lens, providing a way to involve many different characteristics of social stratification that challenge fairness and equity in energy transformation processes. "Beyond the social order of income distribution, the mechanisms behind income inequality also have to be analysed in order to enhance both social and gender equality of the distributive effects of green growth policies by complementary measures of the existing tax and benefits schemes." (Fraune 2016: 10).

4.1 Stimulating gender-sensitive energy poverty policy

To be more gender aware when addressing energy poverty, policy would need to take into account the distinct gender difference in the causes of energy poverty: women's lower income than men's. In doing so this would contribute to increasing gender equality in the outcomes of having sufficient energy to meet ones needs: in particular health respect and a feeling of social inclusion. Our evidence suggests that there are two specific actions, which are linked, that can be taken to ensure that policies and interventions to address energy poverty are more gender-aware.

There is a fundamental need to raise awareness about the issues related to gender, as well as other social categories which are intersectional, and energy poverty. As we have commented elsewhere there is a very large deficit in awareness about gender and energy issues in general across a range of policy actors (including social science researchers) within the EU at the central level and the national level in both the energy sector and gender specialists. The possible exception relates to gender equality in employment in the energy sector (see for example, Clancy et al., (2001); EY (2014)).

DG Energy has made strides to improve the gender balance in staff. This is to be welcomed since more women have the opportunity for a well-paid, exciting and rewarding career. However, there is no conclusive evidence to show that promoting women results in policy that is more gender-aware and that women in positions of power are more likely to represent women's interests then men are (Child and Krook (2009) cited in O'Neil and Domingo, 2016). Indeed, it could be argued that this

supposition actually places the burden for achieving gender equality on the shoulders of (a relatively small number of) women and takes away any responsibility from men.

Nevertheless, a report for DG Research on progress with gender-sensitive public policies in the EU commented that gender equality in non-employment related policy domains has largely been unsuccessful (Braithwaite, 2006). The few success to materialise have been due to the efforts and perseverance of individual women in key positions of power rather than political commitment to policy objectives on gender equality.

4.2 Collecting sex-disaggregated data on energy poverty

In part, the lack of awareness is linked to the lack of data: *No data - no visibility; no visibility – no interest; no interest – no action; no action – no accountability* (adjusted from Clancy, 2011).

As we have said earlier, beyond a few single-country case studies drawing on relatively small samples, there is a distinct lack of sex-disaggregated data related to energy use and specifically energy poverty within the EU. Providing that data is an important part of raising the awareness about the gender issues in energy poverty. The types of policy actors, such as academic researchers, who would provide the expertise on gender and energy poverty for raising policy makers' awareness of the issue are limited within OECD countries. There is no equivalent advocacy network within OECD countries to ENERGIA, the international network on gender and energy[39], which focuses primarily on the Global South and has been very effective at raising gender and energy issues at the international level.

Despite the lack of data, we can nevertheless make some general statements that indicate that the existing gender gap influences who experiences energy poverty. One of the recognised drivers of energy poverty is income. Women with low incomes are disproportionately found as heads of households either as single parent families or, due to their greater longevity than men, living alone at pensionable age. These women-headed households tend to be poorer when compared to men in similar circumstances. The trend appears to be shifting towards speaking about 'vulnerable customers'. Given the income levels of the groups of women that researchers cited here have identified, these can be considered to be vulnerable. Although low income is only one cause of their vulnerability. The way in which women and men are motivated by and respond to messages about energy efficiency, aimed in part at taking them out of energy poverty, indicate that the use of gender neutral terms such as 'vulnerable consumer' miss the complexity of people's lives and interventions are not gender neutral in their outcomes. Figure 1a shows the dimensions of drivers, causes and effects of energy poverty, and in Figure 1b we highlight the points where there are gender gaps which influence women's and men's options and outcomes.

In order for gender issues to be more visible it is important to recognise that households are not a holistic entity. As we have shown above, the evidence points to households being complex fluid systems with diverse energy needs differentiated not only by income and number of household members. For example, health, disability, age, ethnicity, owner occupier/tenant, rural/urban and housing quality all influence energy demands, use and the outcomes derived from that use. The extensive

[39] www.ENERGIA.org

experience of the UK in assessing energy poverty shows the difficulties of defining categories to accurately assess which households are living in energy poverty. We would stress that there is an urgent need for good statistical sex-disaggregated data supported by qualitative data since it is the latter which allows us to see 'behind the front door' what is the reality of living in energy poverty. As we have shown in the two papers from the UK using qualitative methods (Bell et al., 2015; Sunikka-Blank et al., forthcoming 2018) these are revelatory about the way households experience energy poverty, and the ways that they respond to initiatives aimed at moving households out of energy poverty. In particular, the available qualitative research shows that the "vulnerable consumer" is not a homogenous entity and it is highly gendered.

Data gathering needs to be across the EU - including in the Nordic countries - to reflect not only variations in climate conditions but also in cultural attitudes and gender gaps in income. The excess winter mortality in Sweden (although small in comparison to other countries) should not be a reason for complacency.

Good data is the basis of policy making as well as allowing us to benchmark and track progress. A suitable entry point can be used to kick-start this process. This can be seen from the impetus the Beijing Platform for Action gave to gender mainstreaming, including in the EU and member states. The Treaty of Amsterdam made a clear commitment to 'gender equality', which includes reduced inequalities between women and men, requiring gender equality to be mainstreamed into all Community policies (Braithwaite, 2006). This commitment can be used to promote gender and energy poverty as issues of concern both in DG Energy and the EIGE. The former needs to develop a gender-aware understanding of energy poverty while the latter needs to develop an awareness that energy poverty is a gender issue.

A first step is that the EIGE Index is collecting on a regular basis sex-disaggregated data and reporting on the process of gender-equality in the EU member states. An option could be to include in the next EIGE Index report a section on the energy sector, focusing specifically on energy poverty. There are at least three initiatives that the EIGE Index could contribute to. Firstly, at the Europe 2020 Strategy which aims to create the conditions for smart, sustainable and inclusive growth of the EU. By the end of 2020 five headline targets have to be achieved which cover employment; research and development; climate/energy; education; social inclusion and poverty reduction. Ending energy poverty should be part of ensuring social inclusion. There are also the Sustainable Development Goals (SDGs) which have goals related to gender equality and energy access - these goals are to be reinforcing. So, there should be gender equality in energy access. These goals also apply to the EU and its member states - these are not solely goals for the Global South. Also, there is increasing recognition in the UNFCCC process of the gender dimensions of climate change. Again, these are not problems of the Global South - the issues of health and heat stress are global issues and they have gendered impacts within the member states.

4.3 Gender budgeting

The energy sector is seen as being dominated by men aged 50 and above, with economists and engineers being the dominant professions (Clancy, 2001). While not against gender equity, these professions often do not see the relevance of gender to their work (Christian Michelsen Institute, 1999). So being presented with addressing gender and energy poverty can be puzzling and resisted. However, there are a number of gender mainstreaming methodologies which could be used to support DG Energy and member states in creating gender-aware approaches to addressing energy poverty. Probably the most well-known gender analytical tool is gender budgeting which can be used to break down and identify the differentiated impacts of public revenue allocations and expenditures as they affect men and women (Budlender and Sharp, 1998). An analysis is made stronger by not only looking at the complex content of national budgets (inputs, outputs, and outcomes) but also to look at the negotiation processes used to arrive at final budget decisions – for example to what extent were ordinary citizens involved in identifying priorities and solutions. In this respect, involving women and men living in energy poverty would give governments a much clearer insight into the causes of living in energy poverty, and issues moving people out of energy poverty, and would contribute to redirect public policies and expenditure to promote gender equality.

Gender budgeting is used in a number of EU member states. There has also been a gender budget analysis of Section III of the EU budget with regard to the EC (Cengiz and Beveridge, 2015). The analysis covered only a limited number of policy areas – energy was not one of these. The authors recommended that the method should be applied horizontally to all policy areas. There is a strong argument for this in that a gender issue can be cross-cutting and fall into several policy areas, a failure to pursue gender equality in one area can undermine the efforts in another area. In this context, not addressing energy poverty will undermine the health impacts of living in cold or hot ambient temperatures.

However, there has been some criticism of gender budgets being too technical and beyond the capacity of many citizens and therefore not inclusive (Balmori, 2003). There are more inclusive approaches, for example, the World Bank's Gender Assessment Methodology which has been used in the Energy Sector, including at the government level, using a tool box with a broader range of methods (ESMAP, undated). This approach would analyse available data to make the links with gender and energy (poverty) so building a map similar to Figure 1a supported by quantitative and qualitative data.

4.4 Engendering energy poverty indicators

There have been calls for a definition of energy poverty which covers the EU (for example from The European Economic and Social Committee). As we pointed out above, such a definition has to encompass a range of factors which are considered to influence whether or not households live in energy poverty such as income, building age and quality as well as taking into account the differences of climate, heating options, ways of assessing income, etc. The experience in the UK where there are four different ways of measuring energy poverty situated in one climatic zone demonstrates the complexity of trying to achieve an agreed approach. In this context, we therefore agree with WHO-Europe that instead of trying to develop a pan-European definition of 'energy poverty', member states should develop their own national definitions with guidance at the European level on the factors that need to

be taken into account. Such an approach would allow flexibility to reflect specific conditions, for example, health issues related to using wood for cooking and space heating which would apply to some member states and not others.

No matter which definition of energy poverty is finally decided upon we would stress the need to take gender into account. In Figure 1b we have identified where we consider the gender dimensions lie in the drivers, causes and effects of energy poverty. This does not necessarily require gender specific indicators, only that the data collected are sex-disaggregated. It is here that we need to collect sex-disaggregated data. Indicators and their metrics are a monitoring tool. The development of gender sensitive indicators of energy poverty requires an understanding of the existing base-line. We do not have comprehensive data for even one Member State. We need data to help understand who the energy poor actually are. The evidence we have challenges the notion of the 'average' vulnerable consumer. We consider that a typology of energy users with distinct profiles, which reflect social characteristics, cultural attitudes (such as debt aversion, desire for economic independence, reluctance to ask family for financial support) geography and housing type which might be more helpful than a benchmark based on an average user type. For such an understanding quantitative approaches should be combined with qualitative studies.

5. CONCLUSIONS

In the context of the EU, there is very little data available on gender and energy in general, and even less specifically on energy poverty. Researchers have focused on making the case that there is a gender dimension to energy in the EU (e.g. see Clancy and Roehr (2003)).

There appears to be a lack of awareness amongst politicians, advisors and researchers about energy poverty in general as evidenced by the fact that only a small number of member states have definitions of energy poverty (e.g. the UK), and the fact that relevant stakeholders declined to be interviewed on the grounds that they did not have sufficient knowledge of the subject to give an informed opinion. We have not been able to identify any systematic collection of sex-disaggregated data on energy poverty. This is surprising since this is the recommendation of the Inter-Agency and Expert Group on Sustainable Development Goals indicators and EP FEMM Committee.

As figure 1a shows, energy poverty has a range of drivers, causes and effects with complex interlinkages which are cross-sectoral, for example, a health outcome may be as a consequence of poor quality housing and low-income. We consider that gender analysis linked with intersectionality (disaggregation across other social characteristics) is a tool which shines light on aspects related to social inclusion and gender equality. In addition, we consider that data should also be presented across user typographies related to (1) needs, (2) behaviour and (3) expectations and understanding of the energy system.

Nevertheless, there has been increasing recognition in the EP, the EU institutions (including DG Energy) and member states about the issue of energy poverty. However, it is dealt with in a fragmentary way and misses the multi-dimensional nature of energy poverty. There appears to be no comprehensive, long-term, inclusive picture of the problem at the political level. As a result, the causes and consequences of energy poverty such as health, building quality, household indebtedness, energy costs, social problems and their interdependencies are interpreted separately by EC DGs and the responsible member state ministries with coordination not obvious, e.g. DG EMPL conceptualises energy poverty in terms of income and housing quality[40]. This situation creates inconsistencies in interventions, a plurality of stakeholders, and complex non-standardised procedures that inevitably involve excessive costs, communication problems and administrative delays. Add to this that gender is rarely recognised as a contributor to energy poverty and the gendered consequences of living in energy poverty results in interventions being incorrectly formulated and potentially missing groups of 'vulnerable consumers'. To address energy poverty (including its gender dimension) requires integrated cooperation between EC DGs and ministries at member state level. Bulgaria gives an example of this type of cooperation, where the Ministry of Labour and Social Policy, the Ministry of Energy, and the Energy and Water Regulation Commission are cooperating to establish a policy for vulnerable consumers to secure their access to energy and water services. However, the coordination needs to be extended to a wider group of social actors representing private, public and knowledge institutions together with civil society/ end user organisations with good gender balance among the representatives.

[40] Interview DG EMPL.

The following paragraphs briefly review the main conclusions per research question.

RQ1: How is energy poverty experienced by women and men within the EU?

We only have a very limited understanding of the way women and men experience energy poverty. Indeed, the way outsiders and groups identified as living in energy poverty perceive their condition and their responses to that condition can be different (Chard and Walker, 2016). Gender and energy poverty in the EU member states, can be analysed from three perspectives: economic, biological/physiological, and socio-cultural. These are also interlinked. In general, the causes of energy poverty are considered to be a combination of high energy prices, low income and energy inefficient homes (in particular influenced by the age, condition and materials of the building envelope and energy efficiency of appliances). However, residential status (owner/tenant) and the heating/cooling system are also factors which influence capacity to invest in improvements. People on low incomes often live in housing with poor insulation and frequently use second-hand or old equipment with poor energy efficiency. They often have to pay for their electricity and gas with pre-payment systems which can be charged on a higher unit cost basis than households with monthly billing systems. Due to the income gap between men and women, and the demographic fact that women live longer, it is estimated that women are disproportionately affected by energy poverty.

RQ2: To what extent is existing EU legislation related to energy poverty gender aware?

The simple answer to this is 'not explicitly'. The condition of energy poverty is increasingly recognised within the EU legislation, for example, the Third Energy Package of 2009, the Preamble of the Electricity Directive (2009) and the Natural Gas Directive (2009). However, there is a move to frame energy poverty in terms of 'vulnerable consumers' which a gender-neutral term. The Vulnerable Consumer Working Group has a reference to 'women'. Some member states do identify women (with and without children) as groups to include amongst those vulnerable to energy poverty. However, this is not a gender perspective. This is not the same as gender. Men should not be 'left out of the picture' as the health evidence related to indoor air pollution shows – a topic often presented as a 'women's health issue' also affects men. Also, a failure to take a gender perspective results in not addressing one of the underlying causes of energy poverty: low-income. Women's earnings are significantly lower than men's earnings which results in lower levels of pension; also as a result of low-income not addressed. This is a significant factor as to why there are more women in energy poverty than men.

RQ3: Which energy poverty indicators are applicable within the context of the EU for ensuring gender aware approaches to addressing energy poverty?

At the present moment, since we lack a benchmark of data for the existing gender and energy poverty situation across the EU a full set of indicators is not possible. What we stress is the need for collecting comprehensive sex-disaggregated data which covers drivers, causes and effects of energy poverty where there are clearly gender dimensions.

RQ4: How can the EU best address energy poverty in a gender aware way?

An integrated cross-sectoral multidisciplinary approach could address energy poverty in a more gender-aware way. Existing initiatives like the EIGE 2012 Report on Gender

Equality and Climate Change raise awareness on the connection between gender equality and energy poverty. The Vulnerable Consumer Working Group considers that "older women especially are at greater risk of poverty due to lower pensions" but does not consider gender to be a driver of vulnerability. In 2016, the EP FEMM Committee issued an opinion for the Committee on Employment and Social Affairs on meeting the anti-poverty target in the light of increasing household costs which suggests that an "EU-wide definition of energy poverty is regretfully lacking, while the phenomenon affects women disproportionately", and calls upon "the Commission and the Member States to establish a definition of energy poverty which takes into account gendered aspects of the phenomenon" and "for more ambitious action to tackle energy poverty, which disproportionately affects single women, single-parent and female-headed households". Sex-disaggregated data could assist in awareness raising on the gender dimension on energy consumption and energy poverty in several working groups, like the Vulnerable Consumer Working Group.

6. RECOMMENDATIONS

1. Develop a more gender aware approach to addressing energy poverty.

While the issue of energy poverty is recognised to varying degrees by the EP, the EC, the member states and a number of institutions across the EU there is no clear definition of the concept. This is a common recommendation from the literature we have reviewed and from our case studies (e.g. France and Italy). We support this recommendation. Due to the complexity and variation in a number of influencing factors across member states we agree with the recommendation by WHO-Europe for national definitions with guidance at the European level on the factors that need to be taken into account.

Tracking and monitoring progress with addressing energy poverty requires indicators and data. To ensure that the approach to addressing energy poverty is gender-aware does not necessarily require special indicators but it does require sex-disaggregated data. However, our research has shown that there is no systematic collection of sex-disaggregated data on energy including energy poverty both at the EU level and at the level of the member states. Without such data, firstly there is no understanding of the situation. Secondly, policy makers remain unaware of the situation and civil society is unable to advocate for more gender aware policy. Thirdly, there is no base line to monitor progress. We therefore recommend that Eurostat collects sex-disaggregated data across the EU on the gender dimension of energy poverty. The data should be presented in an intersectional way to represent a typology of energy users at the household level. In addition, both quantitative data and qualitative data should be collected. The former gives an indication of the scale of the problem while the latter provides insights into the reality of the energy poor and shows that the energy poor is not a homogenous group of 'vulnerable consumers'. Such evidence suggests that 'a one-size fits all' approach to moving households out of energy poverty will not reach its targets.

2. Supporting DG Energy in engendering its approach to energy poverty.

The current approach by DG Energy to energy poverty is gender-blind and its Vulnerable Consumer Working Group has a very weak understanding of gender. We therefore recommend that a gender specialist, preferably with experience in infrastructure, is seconded to DG Energy in order to mainstream gender into the approach to addressing energy poverty. The gender specialist could also be a member of the Vulnerable Consumer Working Group. A first step would be the development of a gender action plan for engendering DG Energy's approach to addressing energy poverty. We recommend that the gender specialist, working with the EIGE, develop a methodology for gender mainstreaming in energy poverty, which could be extended to energy policy in general. The methodology could be used to support relevant ministries (e.g. ministries dealing with energy) in member states to mainstream gender into their energy policies.

3. Supporting the EIGE to mainstream gender into energy policy.

Energy Policy across the EU can be considered gender-blind, although policy makers consider it to be gender neutral – they assume gender equality in benefits from energy access. As we have pointed out above, at least in terms of energy poverty women are disproportionately more likely to be found living in energy poverty than men. To engender energy policy within the EU requires leadership and the capacity

to support mainstreaming in energy policy. We consider that should come from the EIGE. There is a number of actions that the EIGE could take. A first step could be to include in the next EIGE Index report a section on the energy sector, focusing specifically on energy poverty. This could be achieved by working with the gender expert within DG Energy mainstreaming gender into energy poverty. The EIGE could also cooperate with the DG Energy gender expert to develop a framework for identifying the gender dimensions of energy policy in Europe. This could form part of the methodology to support the relevant ministries in the member states to mainstream gender into their energy policies. The EIGE could work with their counterparts in member states to support mainstreaming efforts in energy poverty and broader energy policies.

4. Wood fuel, health and gender in the EU.

The data we have presented for Bulgaria on the use of wood for household space heating and cooking will come as a surprise to many. We have a limited understanding of the extent to which households across the EU are using wood for space heating and cooking – although we should point out that wood for space heating is not always a sign of energy poverty. The efficiency of the devices used will influence the level of indoor air pollution household members are exposed to. There is extensive epidemiological data to link exposure to wood smoke to a number of respiratory and other diseases. We therefore recommend to undertake urgent research to assess the extent of exposure to indoor air pollution due to cooking and space heating using woodfuel within the EU and the impact on health.

ANNEX

Annex 1 - References

- Anderson, W., White, V. and Finney, A. (2012) Coping with low incomes and cold homes *Energy Policy* 49: 40-52
- Association for the Conservation of Energy, (2013) *Energy efficiency and excess winter deaths: Comparing the UK and Sweden*. November 2013.
- Bell, S., Judson, E., Bulkeley, H., Powells, G., Capova, K.A. and Lynch, D. (2015) Sociality and electricity in the United Kingdom. *Energy Research & Social Science* 9: 98–106
- Boardman, B. (2010) *Fixing Fuel Poverty*. Earthscan.
- Bouzarovski, S. (2009) East-Central Europe's changing energy landscapes: a place for geography. *Area* 41:452–463.
- Bouzaroviski, S (2014) Energy poverty in the European Union: landscapes of vulnerability. *WIREs Energy Environ*, 3: 276–289.
- Bouzarovski, S. and Tirado Herrero, S. (2014). "The energy divide: Integrating energy transitions, regional inequalities and poverty trends in the European Union". *European Urban and Regional Studies* 2017, Vol. 24(1) 69–86.
- Bouzarovski, S. and Petrova, S. (2015), A global perspective on domestic energy deprivation: Overcoming the energy poverty–fuel poverty binary. *Energy Research & Social Science* 10: 31–40.
- Bouzarovski, S. Petrova, S. and Sarlamanov, R (2012), Energy poverty policies in the EU: A critical perspective. *Energy Policy* 49: 76–82
- Braithwaite, M. (ed.) (2006), *Gender – sensitive and women friendly public Policies: a comparative analysis of their progress and impact*. Final report Project HPSE — CT-2002-00136. Funded under the key action 'Improving the socioeconomic knowledge base' of FP5, DGResearch.
- Brodolini, F. (2011), 'Gender equality in caring responsibilities over the lifecycle'.
- Broek, A. van den, Knulst, W.P., and Niggebrugge, F.D.E., (1997). *Trends in de tijdsbesteding van de Nederlandse bevolking 1975-1995*, Werkdocument 41, Sociaal Cultureel Planbureau
- Cengiz, F. and Beveridge, F. (2015), *The EU Budget for Gender Equality*. Study for the European Parliament's Committee on Women's Rights and Gender Equality.
- Carlsson-Kanyama, A. and Linden, A-L. (2007) Energy efficiency in residences—Challenges for women and men in the North. *Energy Policy* 35: 2163–2172
- Chard, R. and Walker, G. (2016) Living with fuel poverty in older age: Coping strategies and their problematic implications. *Energy Research & Social Science* 18: 62–70.
- Childs, S. and Krook, M. L. (2009), 'Analysing Women's Substantive Representation: From Critical Mass to Critical Actors', *Government and Opposition* 44 (2): 125-145.
- Christian Michelsen Institute (1999) WID/Gender Units and the Experience of Gender Mainstreaming in Multilateral Organisations: Knights on White Horses?

- Clancy, J. S. (2001) *Gender and Energy-Women's Concerns in Energy: Background and State of the Art*. Gender Impact Assessment of the Energy Sub-Programme of the Fifth Framework of the European Communities. Directorate General of Research, European Commission, Brussels.
- Clancy, JS (2011), *Swimming in the Mainstreaming: ENERGIA's Experiences with engendering energy policy*. Technical Brief prepared for ENERGIA (International Network on Gender and Energy).
- Clancy J.S., and Roehr U. (2003), Gender and Energy: Is There a Northern Perspective?, *J. Energy for Sustainable Development* VII(3): 44-50.
- Clancy, J.S., Gregory, J. and Cornland, D. (2001), *Gender Impact Assessment of the Energy Sub-Programme of the Fifth Framework of the European Communities*. Directorate General of Research, European Commission, Brussels.
- COM (2016) *Energy prices and costs in Europe*. http://ec.europa.eu/energy/sites/ener/files/documents/com_2016_769.en_.pdf
- Department for Business, Energy and Industrial Strategy (2017). *Annual Fuel Poverty Statistics Report: England* (2015 DATA)
- EIGE (2017), *Gender Equality Index 2017 - Measuring gender equality in the European Union 2005 -2015.* http://eige.europa.eu/gender-equality-index
- Elnakat, A. and Gomez, J.D. (2015), 'Energy engenderment: An industrialized perspective assessing the importance of engaging women in residential energy consumption management'. *Energy Policy* 82: 175.
- EPEE (undated) European fuel Poverty and Energy Efficiency https://ec.europa.eu/energy/intelligent/projects/sites/iee-projects/files/projects/documents/epee_european_fuel_poverty_and_energy_efficiency_en.pdf, p.3.
- EPSECC (1997): *Environmental Policy, Social Exclusion and Climate Change.* Research Co-operation Work packages 2: Data analysis. Bern, Switzerland: ARAMIS.; Preisendoerfer, P. (1999): *Umwelteinstellungen und Umweltverhalten in Deutschland. Empirische Befunde und Analysen auf der Grundlage der Bevoelkerungsumfragen 'Umweltbewusstsein in Deutschland 1991-1998'*
- ESMAP (undated), *Integrating Gender Considerations into Energy Operations*. Report no. 76571. Knowledge Series 014/13 Washington DC: ESMAP, World Bank.
- Euractiv (2017), 'Fuel poverty is non-existent in Nordic countries'. Interview Stockholm Mayor. Special Report Heating And Cooling.
- EUROSTAT (2015), *People in the EU – statistics on household and family structures*: http://ec.europa.eu/eurostat/statistics-explained/index.php/People_in_the_EU_%E2%80%93_statistics_on_household_and_family_structures
- EY (2014), Talent at the Table. Report prepared by Ernest and Young Global Ltd.
- Fouillet A, Rey G, Laurent F, Pavillon G, Bellec S, Guihenneuc-Jouyaux C, Clavel J, Jougla E and Hémon D.(2006) Excess mortality related to the August 2003 heatwave in France. Int Arch Occup Environ Health 80(1):16-24
- Fraune, C. (2016), *A Gendered Perspective on Energy Transformations*. Paper presented at the IPSA World Congress 2016, Poznań, Poland.

- Healy JD (2004) Housing, Fuel Poverty and Health: A Pan-European Analysis. Aldershot: Ashgate.
- Monzani, D. (2012) Green deal legislation & finance: UK energy efficiency financing.
- London: Department of Energy and Climate Change; February 2012.
- Office for National Statistics (2016). *Excess winter mortality in England and Wales: 2015/16 (provisional) and 2014/15 (final)*. Statistical Bulletin. Release date 23 November 2016.
- O'Neil, T. and Domingo, P (2016), Women and Power: Overcoming barriers to leadership and influence. ODI: London.
- Papada, L. and Kaliampakos. D. (2016), Measuring energy poverty in Greece. Energy Policy 94: 157–165
- Petrova, S. (2017) Illuminating austerity: Lighting poverty as an agent and signifier of the Greek crisis. *European Urban and Regional Studies* 1–13
- Preisendoerfer, Peter (1999): Umwelteinstellungen und Umweltverhalten in Deutschland. Empirische Befunde und Analysen auf der Grundlage der Bevoelkerungsumfragen „Umweltbewusstsein in Deutschland 1991-1998". Herausgegeben vom Umweltbundesamt. Leske und Budrich: Opladen. (Environmental Attitudes and Environmental Behaviour in Germany)
- Pye, S. and Dobbins, A. (2015), *Energy poverty and vulnerable consumers in the energy sector across the EU: analysis of policies and measures*. INSIGHT_E. European Commission 7th Framework Programme.
- Räty, R. and Carlsson-Kanyamaa, A. (2010). "Energy consumption by gender in some European countries." Energy Policy 38 (1): 646–49.
- Roehr, U., (2001). Gender and energy in the North. Background Paper for the Expert Workshop ''Gender Perspectives for Earth Summit 2002: Energy, Transport, Information for Decision-Making''. UNED Forum, Berlin.Scott, J and Clery, E., (2013), *Gender Roles*. In Park, A., Bryson, C., Clery, E., Curtice, J. and Phillips, M. (eds.) *British Social Attitudes: the 30th Report*. London: NatCen Social Research. www.bsa-30.natcen.ac.uk (accessed 27 July 2017).
- Snell, C., Bevan, M. and Thomson, H. (2015) Justice, fuel poverty and disabled people in England. *Energy Research & Social Science* 10: 123–132.
- Sovacool, B.K. (2015), Fuel poverty, affordability, and energy justice in England: Policy insights from the Warm Front Program. *Energy* 93: 361-371
- Sunikka-Blank, M., Galvin, R. and Behar, C. (2018), Harnessing social class, taste and gender for more effective policies. Building Research & Information, 46:1, 114-126. (Published online: 23 Aug 2017).
- Tirado Herrero., S., Jiménez Meneses, L., López Fernández, J.L., Perero Van Hove, E., Irigoyen Hidalgo, V.M., Savary, P. (2016). *Pobreza, vulnerabilidad y desigualdad energética. Nuevos enfoques de análisis.* Asociación de Ciencias Ambientales, Madrid. https://www.ecestaticos.com/file/45aae51d7181a4dd96418a571b2e71ec/1496831519-estudio-pobreza-energetica_aca_2016.pdf

- Tjalma, N. (2016) "Welke componenten van campagnes over energie besparing zijn het meest effectief". AlphaOne,
- Thomson, H., Snell, C. and Bouzarovski, S. (2017), Health, Well-Being and Energy Poverty in Europe: A Comparative Study of 32 European Countries. *Int. J. Envir. Res. and Public Health* 14: 584-604.
- Thomson, H., Snell, C. and Liddell, C. (2016). "Fuel poverty in the European Union: a concept in need of definition?", *People, Place and Policy*:10/1, pp. 5-24.
- WHO-Europe (2007), Housing, Energy and Thermal Comfort. A review of 10 countries within the WHO European Region. Copenhagen: WHO Regional Office for Europe
- World Bank (2012), *State of the Clean Cooking Energy Sector in Sub-Saharan Africa*. World Bank: Washington DC.

Annex 2 – Stakeholders

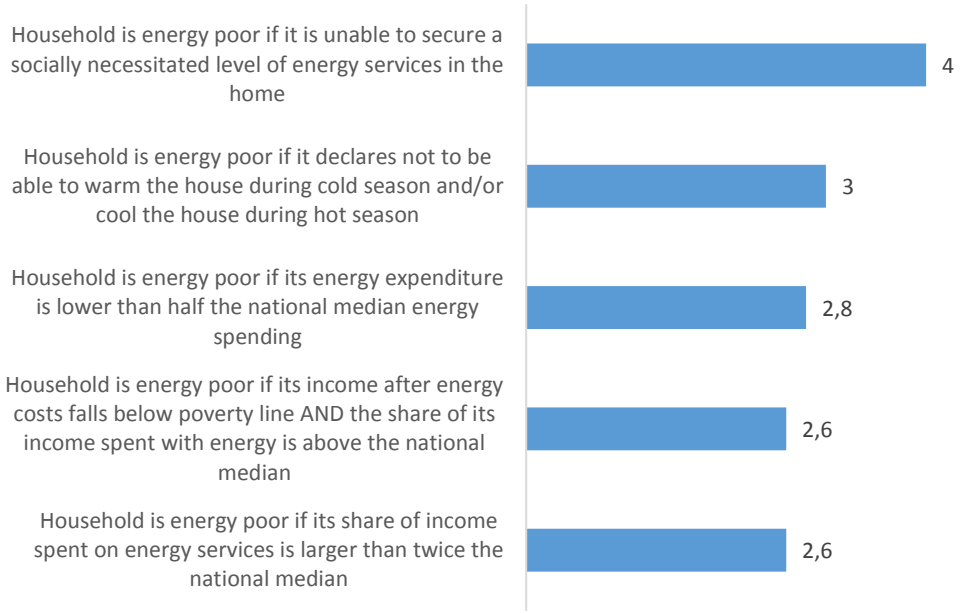
This annex notes the stakeholders consulted.

Agency for Innovation, Development and Education (AISFOR)	IT
Alliance against energy poverty of Spain	ES
Bank of Energy	IT
Bank of Italy	IT
Bulgarian Commission for Protection from Discrimination	BG
Center for International Studies – Sciences Po	FR
Durham Energy Institute, University of Durham	UK
Energy Research Center of the Netherlands (ECN)	NL
European Commission – DG Employment	EU
European Commission – DG Energy	EU
European Commission – DG for International cooperation and Development	EU
European Commission – DG Justice	EU
Fuel Poverty Research Network	EU
Italian Regulatory Authority for Electricity Gas and Water	IT
Low Carbon Energy and Development Research Network	EU
Manchester Urban Institute, University of Manchester	UK
Ministry of Energy – Bulgaria	BG
Ministry or Labour and Social Policy – Bulgaria	BG
National Energy Commissioner	NL
Radbout University Nijmegen	NL
Reimarkt	NL
Stroomversnelling	NL
The French environment and energy management agency (ADEME)	FR
The Italian ESCO Association (Federesco)	IT
Trinonimcs B.V.	NL

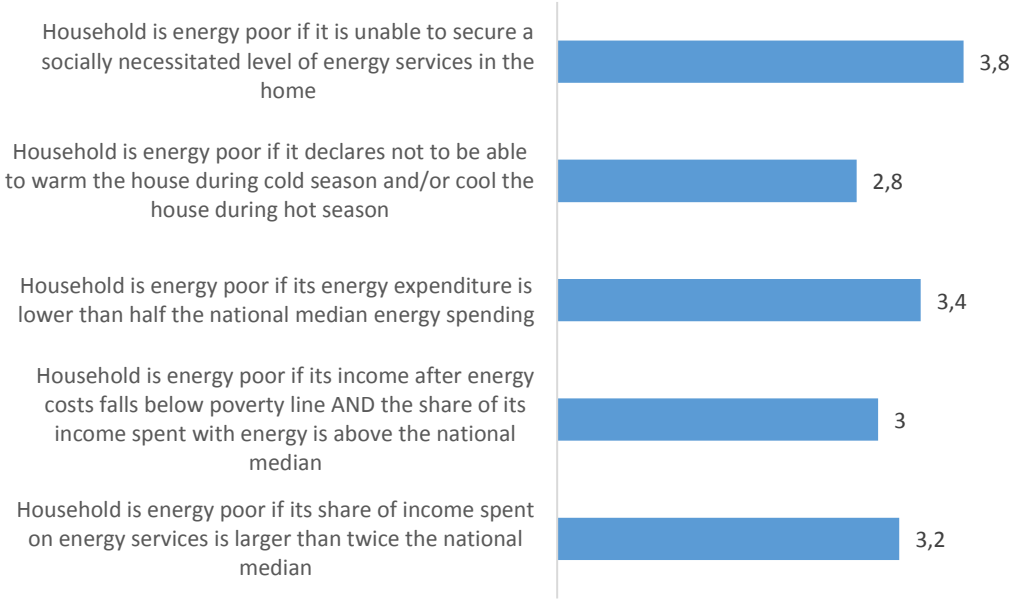
Annex 3 – Survey

This annex includes the respondents' answers.

Energy poverty can be measured in several ways. To what extent do you consider the definitions below gender-aware? (1 very limited extend; 5 very important extent)



Could you please indicate to what extent the same definitions are more applicable for female headed households than for male headed households. (1 very limited extend; 5 very important extent)



In your view, do women and men experience energy poverty differently?

Comments:

'I assume that more women suffer from energy poverty than men because the income of female headed households (e.g. lone parents households) tend to be lower than of households where men are the bread'.

'Single parents and poor elderly people are more often women rather than men. Energy poverty is an aspect of poverty. But I don't know if men and women in decent situations set priorities differently when it comes to either having a warm flat or save money'.

'Women and men consume energy in different ways: men generally use more, women generally less. Women use in general more energy for household tasks, men for transport. Women are in general also more'

'Because of the pay and pension gap'.

'It is linked to the share of unpaid work at home. Availability of supporting energy efficient tools for household maintenance (cooking, laundry, food storage) - affordability of A+++ tools ads subsequent impact on consumption f.ex.

Also cost covering split in the household - who pays for what. F.ex. each pay for petrol for own car but one covers the costs of household expenses/ the other of public expenses. First being constant, second variable. And in our climate - winter heating costs = cost the same for all, but based on age group - different income men/women (pay gap, pension gap) results in "energy use and cost gap". If regulating own heating - women will have lower temperatures to save cost, if not - single/older women will be using % higher part of their income on energy compared to men'.

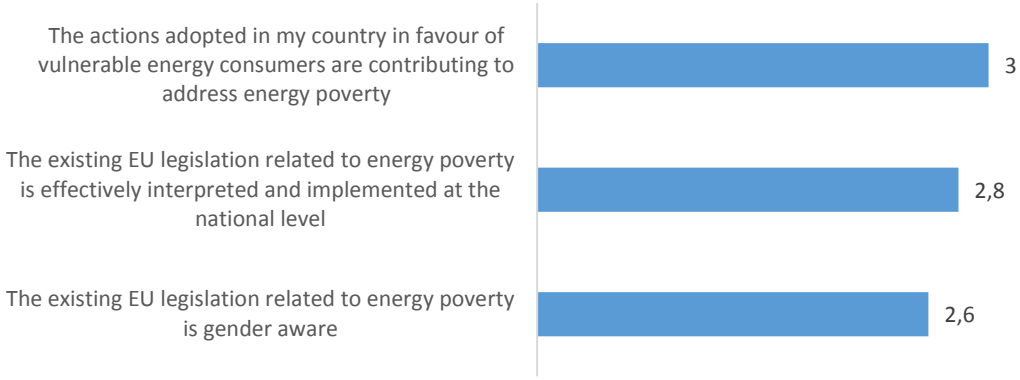
How would you describe energy poverty in a gender-aware way?

'Energy poverty goes along with the general problem of poverty risks faced by women'.

'Just as the general poverty risk, gender-aware energy poverty analyses should not start from the household. Household studies cover up differences between men and women within the household. It could be that women experience a greater energy poverty because a bigger part of the energy consumed goes to traditional male uses, forcing the women to be more economic. Energy poverty in a gender-aware way: the lack of access of a person to the quantity of energy needed to fulfill his/her basic needs and to execute the task expected by his/her gender role'.

'Some points above. A) cost - who pays for what B) consumption for personal or household purposes'

Could you please note to what extent you agree with the following statements. (1 highly disagree; 5 highly agree)



Could you please note what is lacking in existing EU energy policy related to energy poverty.

'lack of gender perspective'

'Gender-aware support for people confronted with energy poverty'.

'Am not aware of details. Cant comment'.

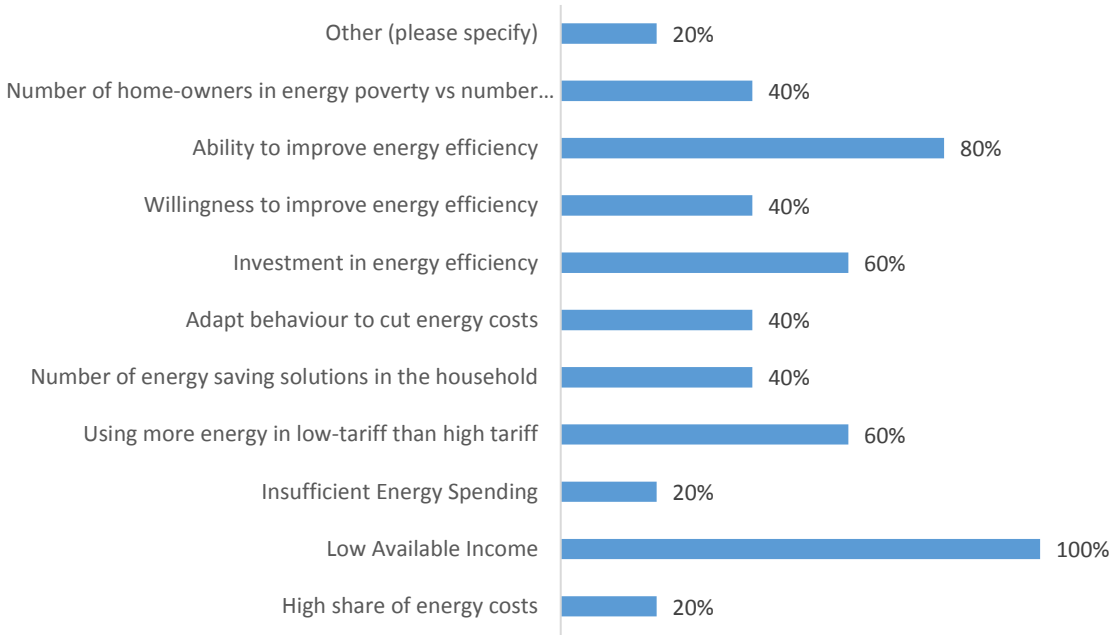
What would you recommend to make EU energy policy more gender-aware?

'link to gender income gaps'

'Analysis of differences between women and men and incorporation of the results in the development of EU energy policy'.

'Accessibility: physical infrastructure rural/urban divide + age (rural + longevity of life men/women and % of accessible infrastructure)'.

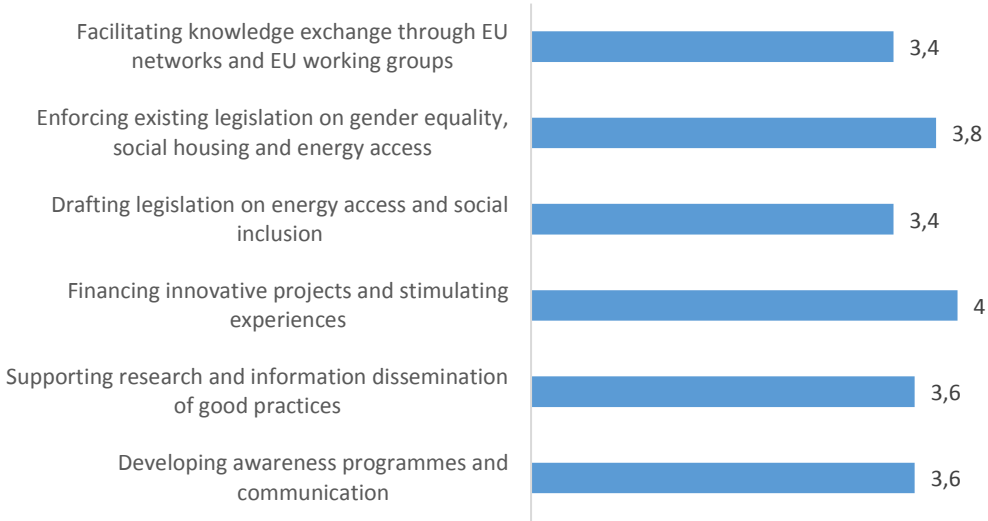
Which of the following energy poverty indicators are applicable within the context of the EU for ensuring gender aware approaches to addressing energy poverty?



Others please specify:

'Disaggregation by sex of indicators'

Please rate how you consider the following EU approaches to effectively address energy poverty in a gender aware way. (1 not effective at all; 5 very effective)



Annex 4 – Case studies comparison

Case study comparison table:

	Bulgaria	France	Italy	Netherlands	Spain	Sweden	UK
Population (2016 worldbank)	7.127.820	66.896.110	60.600.590	17.018.410	46.433.960	9.903.120	65.637.240
GDP per capita (LCU, 2016 Worldbank)	11,751	31,722	25,866	39,346	23,746	405,921	26,925
EU member	2007	1958	1958	1958	1986	1995	1973
Gender income gap (%, EIGE 2017)	79.5	92.3	84.6	95.4	81.2	93.1	85.6
Gender & Energy Policy conditions							
Non discrimination and equality legislation	++	++	++	++	++	++	++
Institutional cooperation on energy poverty	++	++	+	-	++	nd	++
Energy poverty relief budget	+	++*	+	+	++*	++	++
Energy poverty policy							
Energy poverty definition	++	++	+	-	+	-	++
Energy poverty indicators used							
Vulnerable consumers	++	+	++	+	++	++	++
Energy expenditure gap	+	++	++	++	++	++	++
Housing quality	nd	+	+	-	nd	++	++
Energy poverty data	++	++	++	++	++	++	++
Energy poverty policy measures							
Financial relief energy costs	+	+	+	+	+	+	++
Energy consumer protection	+	+	+	++	++	++	++
Energy efficiency programme	-	++	++	++	++	++	++
Monitoring energy poverty	+	++	++	-	++	nd	++
Legend							
++, +, -, nd, * gender-disaggregated							
+ - for yes							
++ more than one measure, or level of awareness,							
* - gender-disaggregated							
- – none							
nd - no data – not known							

In the case study research, the energy poverty policy of six EU member states was examined through a gender lens. In the table above the six countries are compared based on the existing conditions for a gender-aware energy policy, the implementation of an energy poverty policy and the policy measures to eradicate energy poverty. Sweden is added as a reference country, interesting to add because of their gender equality policy.

The following indicators are used:

Gender-aware energy policy conditions:

- Elements of gender awareness in the legal framework: two indicators, the availability of non-discrimination in the constitution and the existence of equality laws. If both are present within the country, the score is '++'
- Institutional cooperation on energy poverty: four indicators are used to measure this condition: 1) cross-sectoral cooperation between different institutions and ministries, 2) the availability of a minister of equality or gender, 3) whether energy policy has a minister of energy policy or if energy policy is part of a department within another ministry, 4) institutions on energy poverty. If all are present within a country, the maximum score is ++. Within our case studies, only Spain has a minister for gender or equality. All the other countries within our case study have gender issues covered by a department and not a separate ministry. Those countries don't receive a score for that indicator. The same is the case for the Minister of Energy. For example, in The Netherlands cross-sectoral

cooperation on gender equal access to energy is partly limited due to the fact that energy policy is the responsibility of the Minister of Economic Affairs and Climate Policy and gender equality is part of the Minister of Education, Culture and Science. Since the Netherlands has also no institutions dealing with energy poverty, the score is zero '-'.

- Energy poverty relief budget: if a case study country has both an energy poverty relief budget and a general poverty relief budget than the maximum score is '++'. Both France and Spain have a gender budget, therefore they have a '*' with their score.

Energy poverty policy:

Energy poverty definition: the score '++' if a country has a formal energy poverty definition, + if the country is drafting or developing a national energy poverty definition, '-' if there is no formal poverty definition at all. If the energy poverty definition was gender-disaggregated than that would be marked with an '*'.

Energy poverty indicators used:

- Vulnerable consumers: two indicators are measured here, the poverty line threshold and vulnerable consumers. If member states are mentioning both in their policy documents on energy poverty then they will receive the full score of '++'. If only one is mentioned, then they will receive '+' point.

- Energy expenditure gap: this is the gap between disposable income and energy expenditure of households, often also referred to energy quota. So, to measure this score, we have looked at three indicators: disposable income, energy expenditure and energy quota. If all three are mentioned by the member states' energy poverty policy the maximum score is '++'. If countries are still in the process of drafting or developing an energy poverty policy including one of the energy expenditure gap indicators, they receive '+' of the score.

- Housing quality is an indicator often used in energy efficiency policies and if mentioned in the energy poverty approach of the member state, then the score is '++'. Again, if a country is in the process of developing an approach, only half the score is granted.

- The Gender Income Equality is the percentage measured by the European Institute of Gender Equality (EIGE) and are values of 2015 published in the EIGE index 2017. The Gender Income Equality measures gender inequalities in access to financial resources and women's and men's economic situation. The first sub-domain of financial resources includes women's and men's monthly earnings and income measured through two indicators. The first is mean monthly earnings from work and the second is mean equalised net income, which besides earnings from paid work includes pensions, investments, benefits and any other source of income. Both are expressed in the purchasing power standard (PPS), which is an artificial currency that accounts for differences in price levels between Member States. The second sub-domain of economic resources captures women's and men's risk of poverty and the income distribution amongst women and men. Indicators included are the percentage of population not at risk of poverty (whose income is above or equal to 60 % of median

income in the country) and the ratio of the bottom and top quintile by sex. The latter indicator is used to measure the level of income inequality among women and among men.

- Energy poverty data: three points are distributed for this category if all indicators are reflected in the data or national statistics: i. energy use, ii. poverty data and iii. gender-disaggregated data. Of the countries in our case study, only Spain and the UK have energy poverty data that are gender disaggregated and therefore receive the highest score with '*'.

Energy poverty policy measures:

- Financial relief: the indicators are any form of subsidy to relieve energy poverty of households, household debt relief programmes and special energy tariffs for vulnerable consumers. Again, the highest score possible is '++' if the country's energy poverty relief programmes mentions all the above indicators. Those policies in draft or are in a developing phase, only receive '+' score.

- Energy consumer protection: 5 indicators are determining the case study countries score on consumer protection policy measures in relieving energy poverty: 1) the availability of registers of vulnerable consumers, 2) prohibiting disconnection from energy services, 3) price comparison tools, 4) consumer rights, 5) ethics code for energy suppliers.

- The existence of an energy efficiency programme is measured by two indicators: subsidy of renovating/refurbishment and information campaign on energy efficiency measures in houses. The maximum score is '++', Bulgaria is developing their policy, so they receive '-' for now.

- Monitoring energy poverty nationally: if energy poverty is monitored at the national level in a regular frequency, the member state in our case study is receiving '++' and if developing a national monitor on energy policy a '-'.

Annex 5 – Case studies

BULGARIA

Country features
Population: 7,127,820 (2016, Worldbank) GDP nominal per capita: 11,751 (LCU, 2016 Worldbank) EU member since: 01.01.2007
Policy Framework
Legal Framework: Gender equality is embedded in the Bulgarian Constitution and in a number of international agreements that the country is party to. It is found in Art. 6(2) of the Bulgarian Constitution of 1991, which guarantees equality before the law for all citizens (regardless of gender, ethnicity, etc.) and prohibits discrimination. The Constitution also postulates that spouses within a marriage and within the family have equal rights and obligations (Art. 46(2)). Furthermore, the Constitution guarantees special protection and social welfare benefits from the state for mothers (Art. 47 (2) of the Constitution). Additional protections against discrimination on the basis of gender are found in other domestic laws. The Law on encouraging employment (State Journal no. 112 of 2001),[41] the Law on social support (State Journal no. 56 of 1998),[42] the Law on higher education (State Journal no. 112 of 1995), the Law on Defence and Armed Forces of the Republic of Bulgaria (State journal no. 112 of 1995). The Family Law Code (State Journal no. 41 of 1985) is based on the principle of 'equality between men and women'; the Social Security Code (State Journal no. 110 of 1999) guarantees equality of persons receiving social security.[43] The Law on Protection from Discrimination (State Journal no. 86 of 2003) was aimed to bring the Bulgarian law in conformity with the EU acquis in terms of equal treatment, equal pay, equal access to labor markets, protection of pregnant women and burden of proof.[44] A milestone was the enactment of a Law on Equality between Women and Men on 15th April 2016 (State Journal no 33 of 2016). The law sets the mechanism for a state policy on equality between men and women (Art. 1 (1)) with the goal of encouraging gender equality by creating the institutional settings necessary for the achievement of this goal, designating the organs and mechanisms for a national policy in this field (Art. 1(2)). Such a policy will be based on five key principles: 1) equal opportunities for women and men in all areas of social, economic and political life; 2) equal access for women and men to all resources in society; 3) equal treatment of women and men and non-toleration of discrimination and violence based on gender; 4) balanced representation of women and men in all decision-making organs; 5) overcoming gender stereotypes (the criteria are found in Art. 2).

[41] Art. 2 of this law (introduced with State Journal 101 of 2015) prohibits direct or indirect discrimination, privileges or limitation on the basis of gender, ethnicity, etc. in the process of exercising any rights or fulfilling obligations under this law. Art. 23 of this law prohibits employers from including gender, age, ethnicity criteria in job announcements unless this is essential for the job.

[42] Art.3 of this law prohibits direct or indirect discrimination on the basis of gender, ethnicity, age, etc. in the course of delivering social support and social services. Any basis for discrimination which is prohibited by a Bulgarian law or international law to which Bulgaria is a party is covered.

[43] National Strategy for Encouraging the Equality of Sexes for the period 2009-215, pp. 8-9.

[44] Ibid, 8-9.

The national policy is set by the Council of Ministers of the Bulgarian government, which also adopts a 'National strategy for equality between women and men' and the plans for its implementation (Art. 5(1)). According to Art. 4, the policy will be pursued by means of the following: 1) the integration of the principle of equality between women and men in all legislation and in all national, regional and local policies, strategies, programs and plans; 2) implementation of temporary stimulating measures which shall be exempt from the law on protection from discrimination; 3) a horizontal inter-sectoral approach; 4) a national institutional mechanism for cooperation between the central and local levels of executive power as well as members of civil society; 5) continuous and stable provision of financial and other resources for the organs and policy on equality between women and men. The law requires that state (including municipal and local) organs, social organs and economic subjects take measures to implement the principles of this policy (Art. 3).

The implementation of the law is the responsibility of the Ministry of Labor and Social Policy (See Art. 7 of the law and §6 of the Concluding Provisions of the Law). Each organ of the executive power – be it at local or central level – is to appoint gender equality coordinators (Art. 8). At the local, the national gender equality policy is carried out by regional governors and other organs of local government in collaboration with the local administration and the territorial representatives of employer and employee organizations (Art 10). They are assisted by the local gender equality coordinators.

Finally, the law requires that gender impact assessment be included in impact assessments of normative acts and strategic documents (Art. 14) and makes provisions for gathering gender-disaggregated data for the purpose of monitoring progress on gender equality (Art. 9).

In addition to these domestic law obligations and the obligations which flow from EU law, the Republic of Bulgaria is party to a number of international agreements guaranteeing gender equality. These include the European Convention on Human Rights, the International Covenant on Civil and Political Rights and the International Covenant on Economic, Social and Cultural Rights, the European Pact for the equality between genders, the Beijing Declaration and Platform on Women's Rights, the Convention on Elimination of Discrimination Against Women (CEDAW).

Legislation on energy services

Art. 120 of the provisions on heating within the Energy Law (State Journal 107 of 2003) prohibit discrimination between users. No other specific legislation on gender access to energy services could be identified.

Institutional Framework:

The Ministry in charge of Energy is the Ministry of Energy.

The Ministry in charge of Gender Issues is the Ministry of Labor and Social Policy (see Law 111 of 2016 on Equality between Women and Men). The Ministry takes the lead in implementing the Bulgarian Gender Equality Strategy. Within the Ministry, a dedicated working group is active on gender equality issues and there is a website specifically dedicated to equality issues.[45]

Another key organ is the National Council for Equal Opportunities for Women and Men which is part of the Government (Council of Ministers). This body is in charge of monitoring and assessment of the National Gender Equality Strategy; it reports to the Council of Ministers.[46]

[45] https://www.mlsp.government.bg/index.php?section=POLICIESI&I=294

[46] http://saveti.government.bg/web/cc_19/1

Stakeholder organisations include employer and employee organizations which are recognized stakeholders in the Law on Equality between Men and Women (See Art. 6(2) 2-3 and Art. 10).

Additional stakeholder organizations on gender issues in Bulgaria include the Bulgarian Helsinki Committee, an NGO advocating for human rights,[47] the Center for Research and Policy related to Women (a think-tank)[48], Gender Project for Bulgaria Foundation (an advocacy group)[49], and Women's Alliance for Development.[50] A regional organization of interest is the KARAT coalition, which 'brings together 63 organizations from 27 countries from Central and Eastern Europe, and Central Asia' and works toward gender equality, social justice and human rights. [51]

Financial framework:
No information about specific gender-based subsidies on access to energy services was found.

(e.g. specific budget/grants/subsidies for gender access to energy services)

Implementation:
No information about specific projects/programs/action plans for gender-aware energy policy or gendered access to energy services was found.

Energy poverty definition

There is no specific definition of energy poverty. However, energy poverty is a topical issue in Bulgaria. As of 2016, there is a proposal for a new strategy on energy poverty.[52] The new strategy will include financial, non-financial, and long-term measures.

New definitions for vulnerable energy consumers have been developed as part of a collaboration between the Ministry of Labor and Social Policy,[53] the Ministry of Energy[54], and the Energy and Water Regulation Commission[55]. However, gender is not a criterion that is covered. The definition will cover persons over 70 years of age, living alone and with sole source of income from their pensions up to the poverty threshold for the respective year, persons with 90 % or more limitation of work ability and who need additional help, families with children with disabilities who rely on additional help, and persons and families who already receive targeted aid for heating according to the law on social welfare. It is expected that the number of vulnerable consumers is about 1.1 million people or 14 % of the population; by contrast, the category is 12% of the population in Romania.[56]

[47] http://www.bghelsinki.org/bg/temi/prava-na-zhenite/

[48] http://www.cwsp.bg/htmls/page.php?category=1

[49] https://www.gender-bg.org/en/about-us.html

[50] http://women-bg.org/en/about-wad/

[51] https://www.karat.org/

[52] See Ministry of Energy website (News) 'Министър Петкова: Задължително условие за успешно преминаване към пълна либерализация на електроенергийния пазар е защитата на уязвимите клиенти в България' (Minister Petkova: An essential requirement for successful transition to full liberalization of the energy market is the protection of vulnerable consumers in Bulgaria) (26.05.2016) ''https://www.me.government.bg/bg/news/ministar-petkova-zadaljitelno-uslovie-za-uspeshno-preminavane-kam-palna-liberalizaciya-na-elektroener-2264.html

[53] https://www.mlsp.government.bg/index.php?lang=

[54] https://www.me.government.bg/bg

[55] See http://www.dker.bg/en/home

[56] Translated from Bulgarian from the Ministry of Energy website (News) 'Министър Петкова: Задължително условие за успешно преминаване към пълна либерализация на електроенергийния пазар е защитата на уязвимите клиенти в България' (Minister Petkova: An essential requirement for successful transition to full liberalization of the energy market is the protection of vulnerable consumers

The social subsidy measure is meant to be temporary and it will cover up to 100 kWh per month per household for those households relying on central heating or natural gas, or up to 150 kWh per person or household for those using electric boilers for hot water, apart from their heating needs. The subsidy will cover about 70% of the cost of electricity which equals 33% of the final bill for vulnerable consumers when network charges, VAT, etc. are factored in.

Among the non-financial measures, there are several proposals. One is a proposal for registers of vulnerable consumers. For these consumers, interrupting electricity supply will be prohibited due to health reasons for those on life-sustaining equipment; or during the winter season for up to 30 days for persons with up to 90% inability to work who need external help. There will also be a possibility to restructure one's debt. Another measure will be running information campaigns, using independent and trustworthy price comparison tools, including online platforms; and creating an ethics code for good conduct for suppliers.[57] [2]

Energy poverty indicators

As noted above, currently there is no formal definition of energy poverty.[58] Such a definition is not found in the Law on Energy, nor in the National Strategy on Reduction of Poverty and Encouraging Social Inclusion 2020.

The poverty line in Bulgaria as of 01.01.2017 is set at 314 BGN (160.54 EUR) per month as per Ordinance No. 23 of 26th January 2017 on Defining the National Poverty Line (State Journal no. 11 of 2017).

The guaranteed minimal monthly income is set at 65 BGN (33.23 EUR) as per Ordinance No. 6 of 15th January 2009 on Setting a New Monthly Threshold for the Guaranteed Minimal Income (State Journal no 7 of 2009). The threshold has not been adjusted since 2009 although there are currently proposals to increase it to 75 BGN (38.34 EUR).

The criterion used for granting energy subsidy to consumers is monthly income below a given amount (amounts are tailored per category and are calculated as a coefficient of the guaranteed minimal income). The following table summarizes the criteria and the income thresholds. Energy consumers are entitled to aid if their monthly income is below these thresholds and when they meet the following additional criteria:

- No contract for support or care in exchange for inheritance
- No sales of real estate in the past 5 years
- No travel abroad at own expense in the past 12 months
- No more than 500 BGN in savings per family member.[59]

in Bulgaria) (26.05.2016) ''https://www.me.government.bg/bg/news/ministar-petkova-zadaljitelno-uslovie-za-uspeshno-preminavane-kam-palna-liberalizaciya-na-elektroener-2264.html

[57] Ibid.

[58] See also REACH Report on Bulgaria (2014) < http://reach-energy.eu/wordpress/wp-content/uploads/2014/12/D2.2-EAP_EN.pdf >

[59] The source of information in the table is < http://pomosti.oneinform.com/socialni-pomosti/ > and Ordinance No. RD-07-5 of 16.05. 2008 on the Criteria and Procedure for Grant of Targeted Support for Heating. Some changes to the thresholds were introduced with an amendment to the Ordinance (State Journal no 57 of 14.7.2017).

TYPE HOUSEHOLD	INCOME THRESHOLD	HEATING SUBSIDY (FOR FIVE MONTHS) TOTALLING
One person above 75, living alone	202.2 BGN	365.10 BGN
One person above 65, living alone	193.62 BGN	365.10 BGN
Person above 70	134.34 BGN	365.10 BGN
Each of spouses living together	108.6 BGN	365.10 BGN
One person co-habitating with another person	146.04 BGN	365.10 BGN
Person living alone	151.50 BGN	365.10 BGN
Person with permanently reduced ability to work, living alone	177.24 BGN	365.10 BGN
Person with permanently reduced ability to work at or above 50%	134.34 BGN	365.10 BGN
Person with permanently reduced ability to work at or above 70%	160.08 BGN	365.10 BGN
Person with permanently reduced ability to work at or above 90%	193.62 BGN	365.10 BGN
For children aged 0-18 or, if studying, until graduation from high school but not after 20 years of age.	117.18 BGN	365.10 BGN
A single parent taking care of a child/children aged 3 and under.	134.24 BGN	365.10 BGN
A single parent taking care of a child aged 18 or under or up until high school graduation but not after 20 years of age.	177.24 BGN	365.10 BGN
Pregnant women 45 days before giving birth	134.34 BGN	365.10 BGN
A parent caring for a child aged 3 and under	134.34 BGN	365.10 BGN
For an orphaned child	142.92 BGN	365.10 BGN
For a child with permanent disability	142.92 BGN	365.10 BGN

The criteria above have no gender dimension.

Feminization of poverty

The National Statistical Institute does collect gender and age disaggregated data on persons and households living in poverty, living at risk of poverty, and those living in economic hardship. There is evidence of feminization of poverty and this is especially evident for the older age groups, where nearly twice as many women as men in the 65 + age group live in poverty. For the 18-64 group, there are no notable differences – similar or even lower percentages of women within the category and men within the category live in poverty or risk of social exclusion. However, there is need to understand the diversity within this category. For instance, the data for 2016 shows that 47.4 of single parents living with dependent children live in poverty. If a majority of these single parents are women, this means that the for women within the 18-64 group are not representative of the category as a whole and might be skewed by well-earning women in that age group. Further disaggregation by age can help tease out differences between different age groups and thus help identify priorities for intervention.

The following data is translated from the National Statistical Institute.

Relative share of the poor disaggregated by gender and age:

AGE GROUP	GENDER	YEAR OF INVESTIGATION	2012	2013	2014	2015	2016
		Reference year for income	2011	2012	2013	2014	2015
Combined	Combined	number of persons in thousands	1558,8	1527,5	1578,3	1585,8	1638,7
		% of total	21,2	21,0	21,8	22,0	22,9
	Male	number of persons in thousands	697,6	697,3	736,1	702,9	753,8
		% of total	19,5	19,7	20,9	20,0	21,7
	Female	number of persons in thousands	861,2	830,3	842,1	883	884,9
		% of total	22,8	22,2	22,6	23,8	24,1
0-17	Combined	number of persons in thousands	343,9	335,9	377,3	305,6	385,4
		% of total	28,2	28,4	31,7	25,4	31,9
18-64	Combined	number of persons in thousands	825,9	803,4	880,3	824,2	897,6
		% of total	17,4	17,1	18,9	18,0	20,0
	Male	number of persons in thousands	415,0	409,7	454,6	420,5	466,3
		% of total	17,4	17,3	19,4	18,2	20,5
	Female	number of persons in thousands	410,8	393,7	425,7	403,6	431,2

		% of total	17,4	16,9	18,5	17,8	19,4
65 and older	Combined	number of persons in thousands	389,1	388,2	320,6	456,1	355,7
		% of total	28,2	27,9	22,6	31,7	24,3
	Male	number of persons in thousands	108,1	118,8	103,2	128,7	93,8
		% of total	19,3	21,0	18,0	22,1	15,9
	Female	number of persons in thousands	281,0	269,4	217,5	327,4	262,0
		% of total	34,3	32,6	25,8	38,2	30,1

It is notable that among the working poor and the unemployed, lesser percentages are women.

However, among the poor who are economically non-active (those not participating in the labor market but not unemployed and not retired), a higher percentage is also female. A hypothesis which could explain the difference could be that women forego economic activity in order to take care of children or sick relatives. However, data is necessary to verify this hypothesis.

TABLE: RELATIVE SHARE OF THE POOR ACCORDING TO TYPE ECONOMIC ACTIVITY AND GENDER[60] (FOR PERSONS AGED 18 AND ABOVE):

Year of investigation		2012	2013	2014	2015	2016
Reference year for income		2011	2012	2013	2014	2015
Type economic activity	Gender					
Employed	Combined	7,4	7,2	9,2	7,7	11,4
	Male	7,7	7,9	9,7	8,2	13,0
	Female	7,0	6,4	8,6	7,2	9,6
Not economically active	Combined	31,3	30,9	29,3	35,0	32,7
	Male	29,1	29,1	28,7	31,9	30,2
	Female	33,0	32,3	29,7	37,2	34,5
Unemployed (without work but seeking employment)	Combined	48,5	47,6	50,2	53,3	54,6
	Male	50,5	47,7	52,7	55,5	57,6
	Female	45,9	47,5	46,8	50,4	50,9
Retired	Combined	26,2	25,9	21,1	30,0	24,7
	Male	18,2	19,1	16,6	20,5	16,7
	Female	31,5	30,6	24,2	36,4	30,0
Others inactive (e.g. students, homemakers)	Combined	27,4	25,1	27,7	29,1	32,3
	Male	25,0	24,6	23,1	26,9	27,8
	Female	28,7	25,4	30,4	30,3	34,6

[60] Source: National Statistical Institute, Indicators on Poverty

Source of data: National Statistical Institute, Indicators of Poverty and Social Inclusion for the Country.[61]

Mind the gap?

According to the Agency for Social Support, for the heating season 2016-2017, a heating subsidy was granted to 217 635 persons or households.[62]

By contrast, according to the data provided by the National Statistical Institute for 2016 (see table OV-1a above), a total of 1 638 700 persons qualified as poor, of them 884 900 were women (of those – 262 000 were aged 65 and older). This shows a clear discrepancy between the aid granted and poverty definitions and invites reflection on the true size of energy poverty in the country and its gendered dimension.

Energy access data
No gender-disaggregated data have been identified, despite provisions in the Law on Equality between Women and Men which call for the collection of gender-disaggregated data. However, we do see an increase in the consumption of wood for heating, especially in 2015 and 2016. We also know that among the poor, especially those aged 65 and above, a disproportionate number are women (Gender and age-disaggregated data available from the National Statistical Institute referenced above). This is a point for further investigation.
What are the policy measures for improving gender equal access to energy services?
No specific measures were identified.
What are the key findings and conclusions looking at this country?
Both gender equality and energy poverty are topical issues in Bulgaria. The adoption of the law on gender equality signals commitment on the issue. The issue of energy poverty is also prominent on the agenda of the Bulgarian government. However, the two policies seem to be evolving in parallel instead of 'talking to each other'. This puts in question the 'horizontal intersectoral approach' principle embedded in the Law on equality between Women and Men and the requirements for gender impact assessment embedded in that law. Similarly, the data of the National Statistical Institute do not allow for a clear finding regarding gender- or age-disaggregated consumption patterns on energy and different energy sources (such as coal and wood). Of course, the Law on Gender Equality is in its early stages of implementation (it is only in force since April 2016). On the other hand, Bulgaria's obligations on gender equality pre-date the enactment of the law and national strategies with similar commitments have existed before the enactment of the law in 2016.[63] Essentially, the Law on Gender Equality has codified and provided an explicit legal basis for policies and organs which have pre-dated: such as the national strategy

[61] National Statistical Institute, Indicators on Poverty

[62] See Ministry of Labor and Social Policy, Agency for Social Support, http://www.asp.government.bg/web/guest/about/-/asset_publisher/qGchKUMwkm0t/content/k-m-1-septemvri-2017-g-sa-otpusnati-100-000-celevi-pomosi-za-otoplenie-i-nad-23-000-za-p-rvoklasnici/maximized?_101_INSTANCE_qGchKUMwkm0t_redirect=%2Fweb%2Fguest

[63] See e.g. National Strategy for Encouraging Gender Equality 2009-2015 (adopted in 2008) http://www.strategy.bg/StrategicDocuments/View.aspx?lang=bg-BG&Id=482 .

on gender equality, the working group within the in the Ministry of Labor and Social Policy, and the Council on Gender Equality attached to the Council of Ministers.

The priority of the current Strategy on Equality between Women and Men 2015-2020 seems to be on encouraging employment (encouraging women's employment and encouraging payment equality). For instance, the stakeholders explicitly identified in the law are employers and employee organizations. This is, of course, needed but we should realize that tackling barriers to employment today does not alleviate the problem for those whose pensions are already too low or those who cannot respond to labor market incentives due to their current situations which might require extensive domestic labor, childcare and care for sick or elderly relatives and parents.

There is evidence of feminization of poverty among the elderly (age 65 and above) in every category: poverty, risk of poverty and social exclusion, and living in economic hardship, with disproportionate percentages of women in these groups. Targeted measures to improve the energy access or housing conditions of these women could help address imbalances which present themselves today but whose root cause is in the past. When designing supporting measures, it is important to understand the unique difficulties that older women or women living in rural areas might face when claiming subsidies (e.g. illiteracy, geographical remoteness from branches of social service agency, lack of awareness about right to a subsidy, inability to gather an extensive number of supporting documents).

In the long-run, important measures to consider include affordable child care and care for the sick and elderly. Such measures could help bring non-economically active poor women on the labor market or in commerce. Providing such facilities may allow more women to be economically active and thus prevent the issue of feminization of poverty in the future. Of course, the presence of such options are only part of the solution: gender-related expectations within the family should be addressed since even affordable care for children and the elderly may not be seen as a legitimate expenditure for families with traditional expectations about division of labor within the family.

When it comes to energy poverty, there is a need for a definition and indicators which reflect Bulgaria's unique characteristics with respect to climate, housing, and user needs and expectations. As noted by the REACH Report, whereas the majority of government support is related to supplementing income, the structural problems related to quality of infrastructure and quality of housing (energy efficiency) remain.[64] To this we might add that measures addressing the affordability of energy saving or generating technologies, and measures to raise awareness regarding energy efficient behaviors should be taken.

These policies should seek to achieve results which match actual user needs and expectations. These needs might include e.g. preference for home-cooked meals (as opposed to purchasing ready-made meals or eating out), preference for certain temperatures (especially among the sick and elderly) and other energy needs depending on the specific needs of the user (e.g. cooking, cleaning and washing, TV watching, computer time, heating and cooling). A typology of energy users with distinct profiles might be more helpful than a benchmark based on an average user type.

Data should be collected on who the energy poor are – where they live, whether their housing is well insulated, how extensive their knowledge about energy efficiency and energy saving measures is, whether they have access to efficient energy infrastructure (e.g. central heating), energy saving technologies, and energy generating technologies. Gender perspective can be a helpful analytical tool

[64] See REACH Report, 17-19 and 21-22.

for understanding user behavior and constraints. Knowing the age, gender, family situation, or ethnic status of the energy poor can help design policies which target specific problems and thus avoid wasting effort on 'average solutions' for 'average' energy consumers.

Quantitative approaches should be combined with qualitative studies which consider the way in which energy is actually used and the understandings or misunderstandings (e.g. about energy prices and energy efficiency) that shape energy consumption patterns. Cultural elements such as aversion to debt, desire for economic independence and concern about burdening family should also be investigated. This is important because measures or indicators based on indebtedness are likely to miss out on those who – for cultural or other reasons – would rather freeze in the winter than risk falling into debt.

Future studies should focus not only on income and ability to pay bills but also on the nature of energy needs and how energy expenditure can be optimized. Improving housing conditions and affordable energy saving technologies (efficient electrical appliances such as washing machines, refrigerators, air-conditioning and heating devices) or energy generating technologies should be considered – not only for households with ability to pay but for those who need them the most, the most energy poor.

The nature and quality of energy infrastructure should also be considered. According to the REACH report, many houses choose not to use the central heating system and choose to rely on electricity instead – a choice which means distribution costs are to be borne by the fewer remaining users.[65] On the other hand, the insufficiently developed gas distribution network limits the possibilities of users switching or supplementing their heating needs with gas.[66] As a result, many users choose to meet their energy needs by relying on polluting, inefficient, and unhealthy options such as wood and coal. The National Statistical Institute shows that the consumption of coal and wood is stable or growing (in the case of wood) since 2010, and that the consumption of electricity is increasing.

LIGHT, HEATING AND ENERGY: AVERAGE CONSUMPTION PER 100 HOUSEHOLDS

	2010	2011	2012	2013	2014	2015	2016
Wood (in cubic meters)	261,3	272,1	271,5	224,5	255,6	401,0	386,2
Coal (in kilograms)	21600	21500	23800	14900	16100	14300	15000
Liquid fuels (in liters)	87,0	43,3	38,0	42,3	36,5	20,2	13,3
Electricity (in kWh)	363315	366914	382353	383500	389155	395847	400012
Gas (in liters)	1357,8	1470,7	1270,5	1283,3	1276,7	1864,3	1479,1

Source: Bulgarian National Statistical Institute website, *Data on Average Prices and Bought Quantities of Basic Goods by Households* (translated from Bulgarian)[67]

[65] REACH, p.18.

[66] REACH, p. 18.

[67] National Statistical Institute, <http://www.nsi.bg/bg/content/3271/%D0%BD%D0%B5%D1%85%D1%80%D0%B0%D0%BD%D0%B8%D1%82%D0%B5%D0%BB%D0%BD%D0%B8-%D1%81%D1%82%D0%BE%D0%BA%D0%B8 >

What are the policy recommendations?
A truly horizontal inter-sectoral approach should be taken to evaluate women's access to resources in society. These resources include essential services such as energy, water, telecommunications, healthcare etc. A gender lens can reveal wide differences which are obscured by 'averages' and can thus help improve the effectiveness of policy. Who are the Bulgarian women and how do they use energy? This report has encountered difficulty in gathering this data within the limited time frame because such data is not readily available. However, evidence-based policy making requires data, so collecting gender-disaggregated data should become standard practice – not only with respect to employment but also with respect to consumption and access to essential services in society. Qualitative approaches should supplement statistical data gathering in order to provide a deep understanding of the different energy user profiles and the social, institutional and material contexts they have to navigate. This includes social expectations about gender roles, institutional barriers to access to social support and energy-saving technologies, and the material context – the geography and infrastructure of the places where energy poor live.
References:
Law • Constitution of Republic of Bulgaria • Law on encouraging employment (State Journal no. 112 of 2001) • Law on social support (State Journal no. 56 of 1998) • Law on Equality between Women and Men on 15th April 2016 (State Journal no 33 of 2016) • Energy Law (State Journal 107 of 2003) • Ordinance No. 23 of 26th January 2017 on Defining the National Poverty Line (State Journal no. 11 of 2017). • Ordinance No. RD-07-5 of 16.05. 2008 on the Criteria and Procedure for Grant of Targeted Support for Heating, as amended (State Journal no 57 of 14.7.2017) Policy Documents • National Strategy for Encouraging the Equality of Genders for the period 2009-215 • National Strategy for Encouraging Equality Between Women and Men 2016-2020 • National Strategy on Reduction of Poverty and Encouraging Social Inclusion 2020 Statistical Data • Bulgarian Statistical Institute (website) Other Sources • Ministry of Energy Website (News) • Ministry of Labor and Social Policy (Gender Equality webpage) < https://www.mlsp.government.bg/index.php?section=POLICIESI&I=294 • Petar Kisyov (Reduce Energy Use and Change Habits: REACH), Report on Energy Poverty in Bulgaria (2014) http://reach-energy.eu/wordpress/wp-content/uploads/2014/12/D2.2-EAP_EN.pdf

FRANCE

Country features
Population: 66.896.110 (2016, Worldbank) GDP nominal per capita: 31,722 (LCU, 2016 Worldbank) EU member since: Founding member
Policy Framework
Legal Framework: The "Law for effective equality between women and men" (2014) is one of the most important legislative pieces regarding gender equality.[68] This law promotes a cross-disciplinary approach integrating the gender perspective in all areas of government intervention. Other laws are more specific and principles of equality are recalled in many legislative texts, including the constitution. ***Institutional Framework:*** In France, the Ministry in charge of energy policy is named Ministry for the Ecological and Inclusive Transition. There is also a Minister of State for Gender Equality, attached to the Prime Minister's Office. Several institutions deal with energy poverty: - The National Observatory for Energy poverty (*Observatoire National de la précarité Energétique*, ONPE): This is an observation tool at the service of national and regional actors, and an instrument for analysing public policies to fight energy poverty. - The National Mediator on Energy: this mechanism was created in 2006 with two objectives: 1) inform consumers about their rights and 2) bring about solutions to disputes between consumers and energy providers. - The French Environment and Energy Management Agency (*Agence de l'Environnement et de la Maîtrise de l'Energie*, ADEME) is active in the implementation of public policy in the areas of the environment, energy and sustainable development. The Agency provides expertise and advisory services to businesses, local authorities and communities, government bodies and the public at large, to enable them to establish and consolidate their environmental action.[69] Other institutions deal indirectly with energy poverty and/or gender, such as the National Observatory for poverty and social exclusion. ***Financial framework*** Since 2010, there in an Annex to the French budget that summarises the budgetary implications of gender policies. This cross-sectional policy document (*Document de Politique Transversale*, DTP) mobilises EUR 310 million in 2017 under six areas of activity. The second area ("Axe 2") relates to the fight against poverty and social exclusion. This budgetary document does not mention energy poverty.[70] In 2017, the budget for the ecological transition was EUR 14 million. From this amount it is then complicated to clearly identify the share contributing to the fight against energy poverty.

[68]Loi No 2014-873 du 4 août 2014

[69] http://www.ademe.fr/

[70]Document de politique transversal, projet de loi de finances pour 2017 – politique de l'égalité entre les femmes et les hommes.

Implementation:
See question below "What are the policy measures for improving gender equal access to energy services?"

Energy poverty definition

Energy poverty in France is defined by the law of 10 July 2010, known as the Grenelle 2 law. It states that a person who is experiencing energy poverty is experiencing difficulties in obtaining the energy required to satisfy its basic needs due to the inadequacy of his resources and/or his conditions of habitat. This takes into account three components: income, the cost of energy and the poor quality of housing. This is the most commonly used definition of energy poverty.

Energy poverty indicators

Energy poverty is measured by the National Observatory on Energy Poverty (*Observatoire National de la Politique Energétique*, ONPE). It uses the following indicators:

- The ratio of "energy efforts" (*taux d'effort énergétique*) which measures the share of the households' income dedicated to energy. When the household dedicates more than 10% of its income to energy, the ONPE considers that it experiences energy poverty.
  In 2013, 2.8 million households (5.5 million people and 10.4% of French households) are experiencing energy poverty according to this indicator.
- The indicator "low income, high expenses" (*Bas Revenus, Dépenses élevées*, BRDE): this indicator considers the households with low income (below national poverty threshold) and high energy expenses (above the French median average).
  In 2013, 3.8 million households (13.9% of French households, 8.5 million people) are experiencing energy poverty according to this indicator.

However, the above indicators fail to capture privation behaviours and the reality of many households.

- ONPE uses a subjective indicator on the number of household reporting to feel cold during the winter. The answers are considered only if the cause of the cold is one of the following: inadequate heating installation, failure of the heating installation, inadequate isolation, voluntary limitation of heating because of energy cost, power cut related to outstanding debt.
  In 2013, 1.6 million households (6% of French households, 4 million people) are experiencing energy poverty according to this indicator.

All three indicators focus primarily on the low-income households. The indicators used by the ONPE do not consider gender.

In reality, the three indicators partially cover one another and the ONPE estimated that 5.6 million households are experiencing energy poverty according to at least one indicator. One million of households reports feeling cold and are in a situation of energy poverty according to at least one other indicator. This represents 3.9% of French households and 2.6 million people, which is considered the core of energy poverty in France and the most vulnerable households.

Despite these indicators, we do not know how things work within the household. It is possible that these models do not integrate all people experiencing energy poverty. For example, the indicators do not consider students.

Energy access data
Every three to six years, the National Institute of Statistics and Economic Studies (INSEE) issues a study on French housing (*Enquête Nationale Logement*, ENL). The last one took place in 2013 and targeted 36 000 housings. The PHEBUS investigation (*Performance de l'Habitat, Equipements, Besoins et Usages de l'énergie*) was last conductedin 2012. It examines the effectiveness of the housing, the equipment, the needs of the households and energy uses. It is more detailed than the ENL study but is conducted with a smaller number of households (only 5 405). Both surveys are the basis for the measure of the energy poverty data cited above. They hardly consider gender because they focus on the household level. As a result, it is hard to know what happen really within the household or what is the composition of this household. However, the surveys consider other social criteria such as age (of the head of the household), income, activity (employee, unemployed, retired, etc.), the status of occupation (tenant or owner), composition of the household (family, single parents, children, etc.), nationality (French, foreigner), type of accommodation (apartment, house), surface, type of heating, etc.
What are the policy measures for improving gender equal access to energy services?
There are no specific policy measures to improve gender equal access to energy services. However, there are policies targeting low-income households, which include more women than men.[71] As mentioned earlier it is difficult to clearly identify the composition of the households experiencing energy poverty because the indicators are based on models. Energy access policies target usual vulnerable populations. It is possible that a significant share of the population experiencing energy precarity is not targeted by the policy measures on energy access. This again is linked with the fact that we do not identify precisely which households are experiencing energy poverty. There are three types of measures: palliative measures (financial assistance mainly and assistance delivered by NGOs), remedial measures (assistance in renovating buildings), and informative and supportive measures (information spaces, social workers, National mediator on Energy, etc.). The bullet points below briefly describe the main measures fighting against energy poverty in France. • The biggest energy providers offer special energy prices to vulnerable households. a) The "basic necessity" rate for electricity (*tarif de première nécessité*) is a lump-sum deduction from the bill applied by the provider according to the composition of the household. This rate was created in 2006. b) The "special rate for solidarity for natural gas" (*tarif special de solidarité du gaz naturel*) is also a lump-sum deduction applied by the provider on the bill according to the composition of the household. This rate was created in 2008. • Since the liberalisation of the energy market in France new providers do not apply these special prices, which is why this measure is replaced by the "energy voucher" (*cheque énergie*). In 2018, the "energy voucher" will fully replace the social energy rates. This is an annual financial assistance to pay

[71] Rapport CESE, Femmes et précarité, septembre 2013.

the energy bill, depending on the fiscal income of the household. It applies to all type of energy: heating oil, gas, electricity, etc. The other main difference between the voucher and the special prices is that people need to ask for the voucher, while the special prices were automatically applied by the provider.

- The Housing Solidarity Fund (*Fond de Solidarité Logement*, FSL) was created in 1990 to provide financial assistance to renovate housing. This fund evolved and is now locally managed (department level) and also provides occasional assistance to households struggling with their energy bills. The Community Centre for Social Action (*Centre communaux d'action sociale*) also provide occasional financial assistance at the local level.
- The National Agency for housing (*Agence Nationale de l'Habitat*, Anah) is implementing a programme called "*Habiter Mieux*" (Live Better) targeting owners in low income households. It can finance up to 50% of the renovation works with an objective to reduce energy poverty. This contributes to the fight against energy poverty in the sense that it fosters renovation works that will help reduce the energy bill. In 2015, Anah contributed to the renovation of 49 706 housings. However, while this allows to save energy, it is uncertain that it sustainably decreases the energy bills given that energy prices are increasing.
- NGOs also provide assistance to the poorest households. For example, the French Red Cross provided 648 244 EUR to 7 022 households in 2015.

What are the key findings and conclusions looking at this country?

- France has a definition of energy poverty that considers income, the price of energy and the quality of housing. This definition is the basis for the measurement of energy poverty.
- The gender perspective is not considered in the measurement of energy poverty because the indicators are based on the household and there is no information on the precise composition of the household. This means that there is no information on behaviours within the households and there is no certainty regarding who precisely is experiencing energy poverty. Policies against energy poverty therefore target the usually vulnerable populations (that are likely to be affected by energy poverty). Some people experiencing energy poverty may not be identified and targeted by the existing indicators and policies.
- Research on gender and energy is relatively scarce.

What are the policy recommendations?

- Identify indicators that would allow a breakdown of the composition of the households experiencing energy poverty.
- Analyse behaviours within the household. It might be that privation behaviours are very frequent (e.g. limiting energy use to off-peak hours and prices). Information on behaviours at the household level is a key element of understanding the gender perspective to energy access. Further research would be needed.

References:

- Ministère de la Transition Ecologique et Solidaire, La lute contre la précarité énergétique:https://www.ecologique-solidaire.gouv.fr/lutte-contre-precarite-energetique [accessed 19/10/2017]
- ONPE (2016), Les chiffres clés de la précarité énergétique, Edition 2, Novembre 2016 : http://www.onpe.org/sites/default/files/pdf/tableau_de_bord/chiffres-cles-precarite-energetique-novembre2016.pdf [19/10/2017]
- Communication de Mme Barbara Romagnan sur la vulnérabilité des femmes à la problématique de la précarité énergétique, présentée à la Délégation

aux droits des femmes et à l'égalité entre les hommes et les femmes, lors de sa réunion du mercredi 17 septembre 2014, Assemblée Nationale.

Stakeholders feedback:

- Interview with R. Guyet, researcher, expert on energy poverty
- Written feedback from I. Devaliere, ADEME

Further remarks

In 2014, the commission on women rights and equal opportunities issued a communication about women's vulnerabilities regarding to energy poverty. The communication first highlights that there is little data available. The Commission based its communication on an analysis of existing studies of the ANAH and INSEE (*Enquête Nationale Logement*, 2006, analyses of ANAH) of housing and the energy poverty indicators. By combining the models and aggregating the data, they managed to find that energy poverty was more likely to affect single-parent families, isolated persons (often old and living alone). These categories of the population usually include more women than men. In 9 cases out of 10, one-parent families are single women with children. Another aspect is that above 80 years old, more women than men live alone in their own house and are more vulnerable from an economic point of view. Out of the 5.6 million households who declare being cold in 2013, 38% are isolated women with or without children. 65% of these women are tenants (with a private owner). More than a third of them are retired or in pre-retirement. Another third is active and there is a significant share of unemployed women. The data on gender is based on estimates, because there is no precise measure of the composition of the household.

ITALY

Country features
Population: 60.600.590 GDP nominal per capita: 25,866 (LCU, 2016 Worldbank) EU member since: Founding member
Policy Framework
Legal Framework: Legal position of women and gender in the constitution: Article 3 of the Italian Constitution: 'All citizens have equal social dignity and are equal before the law, without distinction of sex, race, language, religion, political opinion, personal and social conditions'. Legislation on energy services: The main document is the National Energy Strategy for a more competitive and sustainable energy (2013), a policy document jointly drawn up and published by the Ministry of Economic Development and the Ministry of Environment and meant to set up long-term guidelines on the development of a national energy system, in order to give directions and show priorities to all direct and indirect stakeholders in the energy sector. In spring 2017, the Ministry of Economic Development of Italy has unveiled its draft National Energy Strategy 2017 and opened consultation. The draft includes, for the first time, a chapter on energy poverty. Also, it is worth mentioning the Italian Law Decree 102, 4 July 2014, that recognises and adopts the Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency. Specific laws/legal jurisdiction for gender access to energy services None references to gender issues. ***Institutional Framework:*** Ministry in charge of Energy: Ministry of Economic Development (Energy Department) Ministry in charge of Gender issues: Department for Equal Opportunities (Presidency of the Council of Ministers) Other Actors: The Italian Regular Authority for Electricity, Gas and Water (AEEGSI) and its Permanent Observatory of Energy Water and District Heating Regulation. The Observatory has around 60 members and it aims at facilitating a continuous dialogue with national associations of market operators and consumers, increasing their engagements within decision making processes, particularly regarding market and infrastructure regulation and consumer protection. Relevant stakeholder organisations Consumer organisations: Federconsumatori; Unione Consumatori. Third sector: Caritas Observatory; Bank of Energy. Central bank: Bank of Italy. National trade organisation representing and promoting the energy efficiency industry: Federesco. Private sector: Aisfor; A2A.
Energy poverty definition

There is no official definition of energy poverty.
However, the majority of stakeholders consider energy poverty as the difficulty to acquire a minimum basket of energy goods and services, such as adequate heating / cooling of the apartment, the possibility of cooking food, the ordinary operation of basic appliances and electromedical, or alternatively, in a perceived vulnerability energy, when access to services entails a distraction of resources (in terms of spending or income) higher than a "normal value".

Energy poverty indicators

There are no common indicators to measure energy poverty.

Various stakeholders suggest to adopt a measure derived from the one employed by the British Government on the basis of the so called approach "Low Income - High Costs75" (LIHC), with some corrections that take into account the features of the country, to monitor the progress of energy poverty. In particular, this measure considers jointly:

- The presence of a high level of energy expenditure (greater than the median);
- An amount of total expenditure (net of energy expenditure) lower than the threshold of relative poverty;
- A zero value for the purchase of heating products for families with a total expense lower than the median.

Most stakeholders believe that the incidence of energy spending as a share of total expenditure or income is the main energy poverty indicator. In this case the idea is that it is undesirable for expenditure on these basic goods to exceed a critical threshold (e.g. 10%): beyond this limit, households most probably have difficulties in covering the costs. The general idea is that energy consumption is part of an essential basket of goods which every household should be able to afford in order to have a 'normal' standard of living, characterised by normal heating/cooling conditions and normal use of household appliances. However, stakeholders highlight that another possibility is to use indicators based on the notion of residual income. This stems from the basic thinking that energy is not the unique item essential for a decent life, and that spending on energy can become difficult where it leaves a household insufficient income to acquire other goods or services.

Using this approach, it would be possible to assert that there is a problem with energy access if the household has insufficient financial resources to fund a minimum level of consumption of other goods after paying bills for gas and electricity. Another advantage of this approach is that it allows to identify at least three types of households with access to energy issues for which different types of interventions might be suitable: (i) Households unable to access the minimum amount of essential commodities and utilities: in this case, the problem of energy access can be alleviated by income support mechanisms which are not conditional on the actual level of consumption; (ii) Households with limited income that over-consume: in this case, an appropriately targeted action should address the reason why this happens (preferences, technological constraints, inefficient equipment, etc.); (iii) Households whose consumption is below the minimum standard due to monetary or non-monetary constraints (e.g. lack of access to gas or electricity networks): in this case, interventions should first be aimed at removing these constraints.

The Bank of Italy has very recently (October 2017) proposed the use of a new measure of energy poverty, which is not conditioned by the household preferences. The proposed database is set up by integrating the technological data on the energy consumption needed to heat/cool(?) some types of buildings with the information available in the Italian Central Statistical Institute (ISTAT) Household Expenditure Survey.

Energy access data
There are no gender disaggregated data on energy access in Italy and very limited data on energy access with a gender lens. The national government considers, in the period 2004-2015, the percentage of Italian families in the state of energy poverty was equal to about eight percent of the total (i.e. 2.1 million households), with an incidence in the south of Italy, equal to 14 percent. These data are significantly lower in comparison to the ones calculated by the European Commission in 2015 on the basis of the EUROSTAT survey on income and living conditions, where three proxy indicators were used to assess fuel poverty (over 17 percent). The majority of stakeholders, in order to estimate the number of households at risk of energy poverty, uses the data of the ISTAT on the Italian 'absolute poverty' line. According to the ISTAT, absolute poverty is the state in which a household has a consumption expenditure lower or equal to the monetary value of a basket of goods and services considered as essential to avoid severe forms of social exclusion. Essential requirements are identified in adequate nutrition, availability of a dwelling and minimum necessary to dress, communicate, learn, move, recreate and be in good health. A recent ISTAT study on changes in women's living standards from 2004 to 2014, points out that absolute poverty is increasing among women, with particular regard to two groups: single women aged 65 and more and single mothers with children under the age of 18.
What are the policy measures for improving gender equal access to energy services?
In Italy, there are no specific policies for improving gender equal access to energy services. However, there a several initiatives which aim to tackle energy poverty. At national level (government) the main policy regarding benefits payable for electricity and gas consumption in Italy was set forth by Law 205 of 23 December 2005, and then implemented through the Ministerial Decree of 28 December 2007 (electricity bonus) and the Law Decree 185/2008 (gas bonus). The main aim of the policy is to provide a support to: - households living in poverty - or on its margins; - large households; - households which include a disabled, or a critically ill person (in case of electricity) The bonus is financed through specific components in transmission or distribution, paid by all consumers. The income eligibility criteria for the electricity and gas bonus are the same, and in both cases the spending ability of the family is tested by using a synthetic indicator called ISEE (the Equivalent Economic Conditions Indicator). The indicator combines information about three elements: income, real and financial assets, and the composition of the household. To be eligible, the household's equivalent income indicator should not exceed 7,500 EUR unless the family includes more than three dependents, in which case the threshold is increased up to 20,000 EUR. In 2014, according to the Permanent Observatory of Energy Water and District Heating Regulation, economically vulnerable people who had access to the electricity bonus were about 933,000 while 625,000 had the gas bonus. With a substantial gap in comparison to the around three million people who may have access to the electric bonus and the 2 million and half who would be potentially entitled to the gas bonus. However, there are no publicly available data on the recipients of the benefits.

A relevant private initiative has been recently implemented by A2A, an Italian utility company based in Milan. The company, in the context of its corporate social responsibility set up in 2016 the 'Bank of Energy', a non-profit organisation which aims to raise funds to support projects in favour of people and families in economic distress and energy poverty /vulnerability. In a nutshell, the Bank of Energy raises funds among A2A clients by voluntary donations. Then funds are allocated to non-profit organisations identified and selected through a specific call for grants. The 2017 call for grants had a total budget of two million EUR and a similar call is foreseen for 2018. Among various projects recently selected, one is focused on around 200 single parents and women in difficult and vulnerability situations in the Province of Pavia.

It is also worth mentioning a couple of EU Horizon 2020 projects.

Smart up project. The project involves more than ten different kinds of Italian stakeholders (research institutes, universities, consumer associations, local authorities and social housing organisations etc.) and it aims to: foster the active and effective use of smart meters and in-home displays (where fitted) by vulnerable consumers; to encourage vulnerable consumers to change their energy-related behaviours in response to improved feedback information; and to enable vulnerable consumers to make significant energy savings, reduce their fuel bills and seize further opportunities that may be offered by demand-response services.

Assist2gether project. The project is led by the Italian training company organisation Aisfor (Agency for Innovation, Development and Education), and it aims to fight energy poverty by both actively engaging consumers in the energy market and generating a positive change of behaviour in relation to energy consumption and to influence the design of energy poverty-oriented policies. The project started in May 2017 and it foresees the development of various activities over a three-year period in six European countries: Italy, Spain, United Kingdom, Poland, Belgium and Finland.

Looking at local level initiatives, some municipalities implemented/are implementing projects to deal with energy poverty. This is, for example, the case of the municipalities of Porto Torres and Padova. The Sardinian municipality of Porto Torres, is implementing a new initiative titled 'energy income', for the most vulnerable families through the use of photovoltaic systems on a gratuitous loan. The action combines innovation and energy efficiency tools to fight energy poverty and it consists in providing the most disadvantaged families in the municipality with a photovoltaic system (below 20 kW of power) to be installed on the roof which will allow them to save on average about 200 EUR each year on the electricity bill.

A similar project was implemented by the municipality of Padova from 2013 to May 2017. The 'PadovaFI'T project, co-funded by the Intelligent Energy Europe Programme of the European Union, promoted energy efficiency renovations in residential, private and partly public residential buildings, proposing an action that resulted in considerable energy and economic savings on these buildings reducing in this way energy poverty in the municipality and also obtaining effects of redevelopment and reorganisation of isolated or entire neighbourhoods.

What are the key findings and conclusions looking at this country?

Energy poverty in Italy is a growing phenomenon. This is mainly due to three reasons: the increase of the poverty conditions among the population; the escalating of energy prices; and the inadequate building constructions (from an energy efficiency perspective until 1980/1985).

The main stakeholders believe that, although in recent years the issue is gaining ever greater importance and echo, at present, in Italy, the issue of energy poverty is dealt with in a fragmentary way as there is no comprehensive, long-term,

inclusive picture of the problem at the political level. Therefore, health, home, household indebtedness, the environment and energy, social problems and interdependencies between them are managed separately by the various ministries responsible. This situation generates (or degenerates) the inconsistency of interventions, a plurality of stakeholders, and complex non-standardised procedures that inevitably involve excessive costs, communication problems and administrative delays.

In Italy, there is a lack of data and information on how women and men experience energy poverty. However, stakeholders consider that women might experience energy poverty more than men. This is mainly due to the fact that women have normally a lower income (or pension) and spend more time at home. Also, the 2014 Bocconi University working paper on 'fuel poverty', highlights that single parents are at high risk of poverty.

What are the policy recommendations?

- Introduce a clear definition of energy poverty;
- Introduce a gender lens when analysing energy poverty;
- Improve the instrument 'energetic bonus', for instance by:
  - revising the amounts of the ISEE indicator;
  - extending the bonus to persons who are disconnected and/or use renewables sources;
  - increasing the value of the bonus (e.g. up to 50% of the energy expenditure)
  - simplify the bureaucratic process to get the bonus and improve the communication about it.
- Consider the possibility to adopt a specific plan to fight energy poverty, prioritising a cooperation (at national, regional and local level) between different ministries and sectors (e.g. energy, housing, social services etc.).

References:

Bank of Italy, Energy poverty in Italy
https://www.bancaditalia.it/pubblicazioni/qef/2014-0240/QEF_240.pdf
Bank of Italy, A new indicator of Energy Poverty
http://www.bancaditalia.it/pubblicazioni/qef/2017-0404/QEF_404.pd
European Commission- Staff Working Document – Sate of the Energy Union, Country Factsheet Italy
http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52015SC0229&from=EN
ISTAT, Changes in women's life (2004-2014)
https://www.istat.it/it/files/2015/12/come-cambia-la-vita-delle-donne.pdf?title=Come+cambia+la+vita+delle+donne+-+22%2Fdic%2F2015+-+Volume+%28pdf%29.pdf
ISTAT, Poverty in Italy (2016)
https://www.istat.it/it/files/2017/07/Report_Povert%C3%A0_2016.pdf?title=La+povert%C3%A0+in+Italia+-+13%2Flug%2F2017+-+Testo+integrale+e+nota+metodologica.pdf
Federesco (AEEGSI – Permanent Observatory) Report on Fuel Poverty and Energy Efficiency
https://www.federesco.org/images/Relazione%20Fuel%20Poverty_def.pdf
Bocconi University, Fuel poverty and the energy benefits system: The Italian case
ftp://ftp.repec.org/opt/ReDIF/RePEc/bcu/papers/iefewp66.pdf
National Energy Strategy (2013)
http://www.sviluppoeconomico.gov.it/images/stories/normativa/20130314_Strategia_Energetica_Nazionale.pdf
National Energy Strategy (2017 – draft)

http://dgsaie.mise.gov.it/sen/Strategia_Energetica_Nazionale_2017_-_documento_di_consultazione.pdf
Italian Regular Authority for Electricity, Gas and Water (AEEGSI)
https://www.autorita.energia.it/it/index.htm#
Assist2gether project
http://www.assist2gether.eu/
PadovaFIT project
http://www.padovafit.it/
Bank of Energy
https://www.bancodellenergia.it/

THE NETHERLANDS

Country features
Population: 17,018,410 (2016 Worldbank) GDP nominal per capita: 39,346 (LCU, 2016 Worldbank) EU member since: founding member
Policy Framework

Legal Framework:

Gender equality

The legal framework for gender equality is embedded in art. 1 of the Dutch constitution.

- 1814: Art. 1 Dutch constitution: equality and non-discrimination

The legal framework in the Netherlands on gender equality is strongly based in the non-discrimination principle embedded in the first article of the Dutch constitution. The principal of non-discrimination has even resulted in a political party named Article 1, entirely prioritizing the enforcement of art. 1 of the constitution by achieving equality through eradication of discrimination, racism and social injustice. Ironically, the leader of this tiny political party became a victim of racism and had to be protected due to all the threats she received. The party received 0.3% of the votes in the elections of spring 2017, resulting in zero seats in the Dutch parliament.

- 01/03/1980: Wet gelijke behandeling mannen en vrouwen[72] (Law Equal Treatment and non-discrimination men and women, implementation of EU directive 09/02/1976), this law had major revisions in 1994 and the most accurate version of 01/07/2015. This law improves gender equality, but is almost entirely focusing on equal access to employment and education. Affirmative action to empower women or to improve access to specific vulnerable groups is specifically mentioned in art. 5.
- 02/03/1994: Algemene wet gelijke behandeling (General Law Equal Treatment)[73] focusing on non-discrimination based on religion, political flavour, ethnicity, gender, pregnancy, nationality, sexuality, marital status. This law can only be enforced in the fields of employment, education, consumption (energy is included but not specifically mentioned), membership of unions and social welfare policy.
- 01/10/2012: Wet College voor de Rechten van de Mens (Law on the Committee of Human Rights)[74] this is the Dutch body enacted to comply to the EU Council Directive 2000/43/EC of 29 June 2000 implementing the principle of equal treatment between persons irrespective of racial or ethnic origin[75]. This board used to be called the National Committee of Equal Treatment.

Energy policy

The Dutch energy policy was given a different impulse with the Nationaal Milieubeleidsplan (NMP: National Environment Policy Plan) and the Policy Document on Energy Saving, which was published at the same time (1989)[76]. Since then every four years a new NMP was published to update the progress of establishing a sustainable energy policy by 2030. The climate problem resulting from the production of greenhouse gases was recognised as a serious long-term

[72] http://wetten.overheid.nl/BWBR0003299/2015-07-01
[73] http://wetten.overheid.nl/BWBR0006502/2015-07-01
[74] http://wetten.overheid.nl/BWBR0030733/2013-01-01
[75] http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32000L0043&from=NL
[76] https://www.publicspaceinfo.nl/media/uploads/files/TWEEDEKAM_1989_0001.pdf

problem and because greenhouse gases in general (and CO2 in particular) are emitted through energy consumption, the energy policy was felt to be of direct relevance. A 'sustainable energy system' was therefore made the long-term objective of the energy policy, where the emission of CO2 was drastically limited. The aim was an energy consumption 'transition' to arrive at greater efficiency of energy use, accelerated use of renewable energy and cleaner use of fossil fuels. From that moment on, these three objectives, collectively known as the 'Trias Energetica', determined the entire energy policy.

Till today, there is not yet an energy poverty policy. Poverty eradication policy is the domain of social welfare policies and municipalities. It is reflected in the political tradition of the welfare state and the social security system. Access to services, like water and electricity is not specifically mentioned in poverty eradication policy documents. But in debt-relief-programmes of the government the burden of paying energy bills for those households struggling with poverty is recognized and initiatives and policy measures are implemented. See for more details below under policy measures.

Institutional Framework:
Energy policy

The current national cabinet of ministers is installed in October 2017. Energy policy is the responsibility of the Minister of Economic Affairs and Climate Policy: Mr. Eric Wiebes. He studied mechanical engineering at University Delft with a major in energy supply. After a short career as energy engineer at Shell, he became a business consultant. He started his political career as policy advisor at the Ministry of Economic Affairs and was for four years responsible for infrastructure and air quality as an alderman of the City of Amsterdam. His experience at the municipal level might contribute to a more integral approach to energy policy and a sensitivity to poverty issue. Especially since during the time he was alderman, Amsterdam implemented a major debt relief program.

Energy research Centre of the Netherlands (ECN) is the largest energy research institute in the Netherlands. ECN develops new technology and conducts pioneering research in various ways into innovative solutions to facilitate the transition to sustainable energy management[77]. ECN was established in 1955 as the Reactor Centrum Nederland (RCN), specialised in developing nuclear energy and its objective was the peaceful application of 'the atom'. In 1975 during the aftermath of the oil crisis, energy became in the mid of social debate. This gave rise to a strong call for energy research into alternative forms of power: solar and wind energy, tidal power, biomass, geothermic heat and energy saving. RCN was subsequently designated as the institute responsible for running a large part of this research project. The name was changed from Reactor Centrum Nederland to Energieonderzoek Centrum Nederland (Energy research Centre of the Netherlands). ECN Policy Studies Unit published in January 2017 the first research report on energy poverty in the Netherlands[78].

Gender equality
The Netherlands never had a minister of gender equality, but gender equality and non-discrimination is a task Minister of Education, Culture and Science – Ms. Ingrid van Engelshoven. Her background is in public administration and law. She has not a specific background in gender or equality and she did not yet participated in feminist debate. We see a strong focus of her current policy initiatives on equality and non-discrimination in educational institutions, especially at schools. Although

[77] https://www.ecn.nl/about-ecn/

[78] https://www.ecn.nl/publicaties/PdfFetch.aspx?nr=ECN-E--17-002

this programme is primarily focusing on integration and participation of minorities and migrants.

A number of institutional structures have been created specifically to promote, implement and monitor equal treatment for women and men (i.e. the Committee on Gender Equality of the Parliament, the Commission on Gender Equality Issues and the Office for Gender Equality of the Government, the Ombudsman for Gender Equality). The overall body to ensure gender equality and to eliminate discrimination is the Committee on Human Rights. With the name change to Human Rights, this committee has broaden its scope to a wider ranges of topics, leaving just partly, its specialisation in elimination of inequality and discrimination in the labour market. A wide range of action groups and stakeholders are participating in the equality and feminist debate, none is raising the energy access and energy poverty issue yet.

Financial framework:
There is no specific budget to gendered access to energy services. There is budget for poverty relief in the social policy budget and energy consumers protection in the energy policy budget. None is special designed for energy poverty relief.

Implementation:
In the Netherlands there is no specific projects, programmes or action plans for gender-aware energy policy or gendered access to energy services.

Energy poverty definition

There is no official energy poverty definition in the Netherlands. Energy poverty is an issue that only recently got some attention due to the ECN publication on energy poverty. Straver et al. (2017) defines energy poverty in the ECN Report on energy poverty if a household is not able to pay their energy bills after they have paid their monthly costs of housing and daily living expenses[79].

Energy poverty indicators

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Energy access data

Gender Equality data:

Global Gender Gap Index 2015: the Netherlands: place 13 of 145

EIGE Gender Equality Index 2017: the Netherlands: place 4, the gender equality is 72,9 %

In the Netherlands there are 7,665 households, of which 2,868 are single-persons households[81]. These data are unfortunately not gender disaggregated.

- Global Gender Gap Index 2015: the Netherlands: place 13 of 145
- EIGE Gender Equality Index 2017: the Netherlands: place 4, 72.9 %

[79] Straver, K. et al. "Rapportage Energiearmoede: effectieve interventies om energie efficientie te vergroten en energiearmoede te verlagen", 2017, ECN, ECN-E—17-002

[80] Straver, K. et al. "Rapportage Energiearmoede: effectieve interventies om energie efficientie te vergroten en energiearmoede te verlagen", 2017, ECN, ECN-E—17-002

[81] http://statline.cbs.nl/statweb/publication/?vw=t&dm=slnl&pa=37296ned&d1=0-2,8-13,19-21,25-35,52-56,68&d2=0,10,20,30,40,50,60,64-65&hd=151214-1132&hdr=g1&stb=t

Energy poverty data related to the energy poverty indicators:

Ad 1): the household energy quote:

Like in many other countries in the EU, the household energy quote is increasing the last couple of years. NIBUD, the Dutch institute of budget education reported in 2017 on energy consumption and energy budget of Dutch households. Energy prices in the Netherlands increased between 2000 and 2005 with an average of a staggering 42%. With an equal increase of household incomes, the energy quote will not change. But in 2004 and 2006 the rise of energy prices was more than the increase of income, widening the gap of the energy quote. An estimated 2.6 million Dutch households with a low income are spending roughly 9% of their household budget on energy services. The group of households spending more than 10% on energy consumption has increased between 2006 and 2009 with almost 40%. In comparison, a high-income household spends 3 % till 4 % on energy services[82].

Ad 2): energy debt:

The national debt of households in the Netherlands is estimated by the national bureau of statistics (CBS) of a staggering 760 billion euro[83], this number of June 2017 was even an increase of 3 billion compare to March 2017. Household debt is increasing since September 2014, partly caused by mortgage: from 649 billion euro in September 2014 to 669 billion euro in June 2017[84]. The Netherlands has after Denmark, the highest household debt in the world[85], a large contribution to the households' debt is the mortgage system in the Netherlands. Still, looking at the OECD data from 2015 the following debt numbers are available for our case study countries:

COUNTRY	HOUSEHOLD DEBT (TOTAL, % OF NET DISPOSABLE INCOME, 2015 DATA)[86]
Bulgaria	Data not available
France	108
Italy	89
The Netherlands	276
Spain	122
Sweden	178
UK	150

Since august 2015, every year the Monitor Wet Schuldsanering natuurlijke personen (WSNP, Law Debtrelief Natural Persons) is published. The law of 1 December 1998 is revised in January 2008 is offering debt relief for those natural persons that are in a severe financial crisis. 45,955 persons are receiving assistance of this debt relief program. In 2016, 15,021 persons applied at the court

[82] https://www.nibud.nl/wp-content/uploads/Rapport-2010-Energielastenbeschouwing.pdf

[83] https://www.cbs.nl/nl-nl/nieuws/2017/38/schulden-huishoudens-iets-omhoog

[84] ibid

[85] OECD (2017), Household debt (indicator). doi: 10.1787/f03b6469-en (Accessed on 16 November 2017)

[86] OECD (2017), Household debt (indicator). doi: 10.1787/f03b6469-en (Accessed on 16 November 2017)

to be received debt relief[87], a slight decrease compare to earlier years. In 2016, 9,725 out of 15,021 applications were proven eligible by the court, of which 42%

are women and the largest age group is 36-50 (46.2 %). The average personal debt is € 39,380.

In 2008, the ministry of social affairs and employment started monitoring the payment delay/betalingsachterstand. Within the monitor 7,288,299 households are included but the data is not gender-disaggregated but distinction is made based on income, age, household composition, education, ethnicity, employment. Those households in the official debt relief programme WSNP are not included in the monitor, due to their limited self-control over their expenses. The monitor of 2014 shows that 32,1 % of the Dutch households (2,3 million households) are struggling paying their bills on time[88]. Households with an average income of maximum € 2,000, a month are almost 3 times more struggling paying their bills on time than households with more than € 2,000,- a month income. Young adults under the age of 35 are overrepresented, so as single households without kids (41,2%) and households with children (34,6%). Households with a low income are facing increasing personal debts, but those with a middle education are having the most problems paying their bills on time. The most common debt is debt with family or friends to help paying bills. Especially students, unemployed and disabled respondents are borrowing money from friends and family. Looking at those costs that have the most impact on a household debts, energy bills are number 4.

PERCENTAGE IN TOTAL HOUSEHOLDS (%) (N2014=7,288)[89]					
Type of expenses	2014	2011	2010	2009	2008
Taxes due	9.1	5.6	4.2	1.8	NA
Health insurance	8.7	5.4	3.1	2.5	3.6
Mortgage or rent	6.0	4.5	3.1	2.6	2.9
Electricity, water and gas	5.4	4.3	3.3	1.7	3.1
Total (minimal of 1 bill due)	17.9	3.6	10.0	6.8	8.3
Total	100	100	100	100	100

Ad 3): disconnection rate: unfortunately, no data are available or at least accessible. In 2012, the Dutch Union for Credit (NVVK, Nederlandse Vereniging voor VolksKrediet) took the initiative for a covenant with Energy Netherlands, all energy utility service companies and suppliers agreed to not disconnect households in energy debt during the winter months from October 1st till April 1st and vulnerable groups are accepted from disconnection any time[90]. Also, electricity

[87] https://www.bureauwsnp.nl/binaries/content/assets/wsnp/onderzoek/monitor-wsnp16.pdf

[88] https://www.rijksoverheid.nl/documenten/rapporten/2014/12/19/monitor-betalingsachterstanden-2014

[89] https://www.rijksoverheid.nl/documenten/rapporten/2014/12/19/monitor-betalingsachterstanden-2014

[90] https://www.nvvk.eu/nvvk-convenanten

company Nuon started recently a new policy to reconnect households in energy debt, however, only households eligible for this exemption are those households that already receive assistance in debt relief programs.

What are the policy measures for improving gender equal access to energy services?

Energy poverty relief policy is not a specific policy area in the Netherlands. In the light of the energy transition, in which the demand-driven customer approach is essential to reach the energy efficiency goals, some discussion is emerging among energy researchers and policy makers on the social impact of the energy transition policy:

- 10/2013: Energy Agreement
- 01/2017: ECN report Energy poverty
- 10/2017: ECN publication on the ethical discussion on energy transition. Reflections on the Matthew effect of energy transition in which the rich are getting richer, the poor are getting poorer.
- 2017: MVI – e-brigade: taskforce to raise awareness on social impact of energy transition and to stimulate social innovation in energy efficiency policy. The taskforce is a combination of universities specialised in energy policy research and energy policy makers from the provincial governments. The taskforce is financed by the Ministry of Economic Affairs to enhance the top sector energy innovation.

The above initiatives did not yet resulted in policy measures that are implemented. Indicated in the interviews are a strong need for an energetic urban innovation, focusing on refurbishment of the existing housing stock and especially social housing.

In the 2013 Energy Agreement ambitious aims are formulated for the building environment and existing housing stock, with an energy efficiency goal of a total of 100PJ. The national policy of energy efficiency is primarily targeted to stimulating energetic improvements of buildings, installations and appliances. The policy is not yet very successful, limited improvement is established and especially housing energy efficiency measures are proven to be difficult to implement and encouraged. Special tax reduction, municipal and national subsidies and even European grants are applied by home-owners and housing cooperation's to invest in energy transition and installing energy efficiency technology. In the southern provinces Noord-Brabant, Zeeland and Limburg a € 9.6 million project is developing zero-emission-houses refurbishing existing housing stock of housing cooperations. Municipalities, housing cooperations, technology developers and contractors are cooperating in this EU funded project. Progress is reported slow, but the main result is an attempt to develop a cost-efficient energy-efficient refurbishment package that is affordable and implementable: from Tesla-solution to Ikea-package.

An increasing attention by policy makers and partners in the energy efficiency policy arena is focusing on influencing consumer behaviour. A wide range of campaigns is funded by all levels of government to promote energy efficiency measures to be implemented by consumers and to raise awareness on energy consumption. Consumer organisations educating on consumption and household budget, like Consumentenbond and Nibud, have special websites with energy efficiency tips and energy-costs-saving-behaviour examples. It can be criticized that by focusing on energy consumption behaviour, the causes of energy poverty

is only partly tackled. It points the finger to the consumer who can only change its energy consumption but has no influence on the increase of energy prices.

With a focus on energy efficiency measurements in the energy policy debate in the Netherlands, a growing concern is the so called Matthew-effect of energy transition: *Those who have a lot, gain. Those who have not enough, lose.* ECN published in October 2017 essays on the ethics of energy transition. The high income group is profiting from the transition to energy efficiency, since they have the means to invest in energy efficiency technology, they are often homeowners and will profit from tax reduction and financial constructions to receive a part of their investment back. They are profiting from a decrease of their energy prices and are becoming more independent from electricity service providers. Those middle- and low income households who are more rely on the social housing market and are renting houses, have little decision making power and financial means to invest in energy efficiency measures. The benefits if this group is involved in energy transition will result in a saving of around € 100 a year per household and an energy efficiency of 3 – 5 pJ a year nationally[91].

One of the energy poverty relief initiatives is the energy bank (Energiebank)[92]. In three cities (Arnhem, Rotterdam and Harlem) the energiebank is active in reaching out to households in energy needs to assist them to relief the energy debt and to improve their energy services. This non-profit foundation hires volunteers as energy coaches that consult households to improve their energy efficiency, how to negotiate with energy supplier to decrease their energy debt and they stimulate energy saving consumption

The Dutch Energiebank is however criticised for stigmatisation of the poor and overprotecting vulnerable households, minimalizing their individual responsibility to pay for their own energy consumption and implement a sustainable household budget and consumption pattern.

What are the key findings and conclusions looking at this country?

Energy poverty relief policy is not a specific policy area in the Netherlands, but embedded in the general poverty relief policy within social policy. Within energy policy, the focus is primarily on energy transition, energy efficiency and climate change. This 'Trias Energetica' is the main focus of the Dutch energy policy. In the light of the energy transition, in which the demand-driven customer approach is essential to reach the energy efficiency goals, some discussion is emerging among energy researchers and policy makers on the social impact of the energy transition policy. However, a nationally adopted energy poverty definition and a monitor on energy poverty indicators is lacking. This argues for a national energy poverty eradication policy targeting vulnerable consumers and might enable a gender-aware approach to access of energy services in the Netherlands.

What are the policy recommendations?

- Think global, act local: involve the municipalities but don't leave it at the local level, step up and back up nationally
- Break the silo's: integral and multidisciplinary approach
- Empowerment of vulnerable households creates potential for upscaling energy transition
- Energy transition can help eradicate energy poverty: pilots prove an annual household saving ~ € 100/year, could be ~€ 750 million/year

[91] Straver, K. et al. "Rapportage Energiearmoede: effectieve interventies om energie efficientie te vergroten en energiearmoede te verlagen", 2017, ECN, ECN-E—17-002

[92] https://www.energiebanknederland.nl/

- Energy saving between 3 – 5 pJ, limited contribution to the Dutch energy savings goal of 100 pJ in 2030 but with high social impact!
- Energy poverty eradication campaign need to involve all stakeholders and include energy service providers.

References:

Straver, K. et al. "Rapportage Energiearmoede: effectieve interventies om energie efficientie te vergroten en energiearmoede te verlagen", 2017, ECN, ECN-E—17-002
ECN, "Essay bundel "De ethiek van de energietransitie; inleidende essays over de winnaars en de verliezers van de energietransitie", October 2017

SPAIN

Country features
Population: 46,528,966 (INE, 1 January 2017) GDP nominal per capita: 23,970 EUR (INE, 2016) EU member since: 1986
Policy Framework
Legal Framework: Legal position of women and gender in the constitution: Spanish Constitution of 1978: Art. 14. Principle of non-discrimination related to sex; Art. 9.2. Promotion of equal treatment. Legislation on energy services: Law 24/2013, of 26 December, Law of the Electric Sector. Art. 45 relates to vulnerable consumers. Royal Decree-Law 7/2016, of 23 December regarding the financial mechanism of the cost of the 'social bonus' and other instruments protecting vulnerable consumers of electric energy. Royal Decree 897/2017, of 6 October, regulating the definition of vulnerable consumers and the 'social bonus' instrument. Art. 3 defines vulnerable consumer as a holder of a supply contract meeting certain requirements related to family income; the condition of large family; the condition of pensioner with minimum income. There are certain special conditions that apply also to vulnerable consumers, e.g. the case of victims of gender violence. The condition of vulnerable consumer can be considered as serious depending on the income level. The 'social bonus' is a discount on the price of the electricity granted to the vulnerable consumers, under certain conditions. Vulnerable consumers get a discount of 25% on the price and serious vulnerable consumers of 40%. The discounts are financed by the supply companies. A proposal for 'social bonus' for the gas energy has been recently submitted to the Spanish Parliament. Currently, there is no definition of vulnerable consumer of gas energy. At regional level, there are some laws related to energy poverty, e.g. in Catalonia, Law 24/2015 on urgent instruments to face emergency situations in the areas of housing and energy poverty. This law establishes that the energy supplier company can't stop the supply of electricity or gas without prior communication to the Social Services. Then, the Social Services prepare a report on the case and if they consider that the families are in a vulnerable situation, the energy supplier company can't cut the service. If the Social Services determine that the user is at risk, they implement a system of subsidies or help to pay the service. At local level, there are some strategies such as the Strategy of the Municipality of Barcelona to fight against gender poverty. The strategy includes a section on energy poverty to *'fight against energy poverty and to improve the conditions of households of women suffering from poverty or vulnerability'.*[93] Specific laws/legal jurisdiction for gender access to energy services: No references to gender issues.

[93] Study on Gender inequality and energy poverty 'Desigualdad de género y pobreza energética' Irene González Pijuán y Asociación Catalana de Ingeniería sin fronteras, 2016.

The Law 3 /2007, of 22 March, regarding the effective equality between men and women. Art. 69 relates to equal treatment regarding access to services and supplies (however, there is no specific mention of energy).

Institutional Framework:
At national level, the ministry in charge of energy is the Ministry of Energy, Tourism and Digital Agenda; the ministry in charge of gender issues is the Ministry of Health, Social Services and Equality.
At national, regional and local level, there are several institutions dealing with energy poverty, such as:

- (National) 'Institute for the Diversification and Economy of Energy' (IDAE).[94] This national institution conducts several activities of awareness and training to increase energy efficiency.
- The 'Observatory of Energy Poverty of the province of Gipuzkoa'.[95] Its main objective is to provide relevant and up-to-date information about energy poverty in Gipuzkoa, and about the main instruments implemented to fight against it.
- 'Aliança contra la pobresa energetica'[96] (Alliance against energy poverty) of Catalonia. This is a social movement composed of several stakeholders of Catalonia, aiming to pressure and report the public administration for their failure to act against the abuse of the energy suppliers. They offer collective advice and training to those in need of help.

Financial framework:
No information was found on budged allocated to equal access to energy services in the Spanish National Budget. Nevertheless, there is an annual analysis of gender impact of the programmes of expense of the Spanish National Budget.[97]

Implementation:
See question below 'What are the policy measures for improving gender equal access to energy services?'

Energy poverty definition

What definition of energy poverty is used and by whom?
There is no official definition of energy poverty in Spain. Nevertheless, it is understood as '*the difficulty or unavailability to keep a home with the proper temperature conditions (18ºC in winter and 25ºC in summer) at a fair price*.[98] Three aspects intervene in the definition: low income, low energy efficiency of the building and high energy costs.[99]

According to Spain's Sustainability Observatory, in 2014, 11% of households or 5.1 million people declared themselves not in a position to maintain their home at an adequate temperature during the winter months.[100]

[94] http://www.idae.es

[95] http://www.pobreziaenergetikoa.eus/es/

[96] http://www.pobresaenergetica.es

[97] Analysis for 2017: http://www.sepg.pap.minhafp.gob.es/sitios/sepg/es-ES/Presupuestos/Documentacion/Documents/INFORMES%20IMPACTO%20DE%20GENERO/IIG_2017.pdf

[98] La energía como derecho. Cómo afrontar la pobreza energética. Debats Catalunya Social Propostes des del Tercer Sector. Número 38, Sept. 2014

[99] 'Pobreza energética en España y posibles soluciones'., P. Linares, J.C. Romero, X. López-Otero. Economics for Energy, WP01/2017.

[100] 'Sostenibilidad en España 2017', Observatorio de la Sostenibilidad.

Energy poverty indicators

According to Eurostat, *'the main indicators to measure the energy poverty are the percentage of the population suffering delays in the payment of the energy supplies and that can't keep their home with an adequate temperature. In Spain, these percentages are approximately 9% and 10%, respectively. This means that approximately about 4,5 million people in Spain might be at risk of suffering from energy poverty'.* [101]

Since there is no 'official' definition of energy poverty in Spain, there is also no definition of the indicators. The following table shows some data on the indicators and results for 2015 in Spain. The data have been collected from the table prepared by the authors of the study on 'Energy poverty in Spain, eventual solutions[102]:

MEASURE	PERCENTAGE OF HOUSEHOLDS SUFFERING FROM ENERGY POVERTY
10%- Expense on energy of 10% or more of the income	14.96%
Double the average expenditure	12.29%
Double the percentage of the average expenditure	17.60%
Low income/High cost (LIHC)	8.10%
After fuel cost poverty	22.31%
Minimum Income Standard (MIS)	8.70%

A very comprehensive study on the Energy poverty in Spain carried out in April 2016 by the Asociación de Ciencias Ambientales[103] shows disaggregated data on the percentage of households suffering from energy poverty in Spain, depending on the age and sex of the head of the household:

TYPE OF HOUSEHOLD	>10%	>15%	LIHC	MIS
Main person: man ≤ 65 years old	15%	6%	9%	14%
Main person: woman ≤ 65 years old	15%	7%	11%	15%
Main person: woman ≥ 65 years old	26%	12%	7%	7%

The Observatory of Energy Poverty of Gipuzkoa uses the following indicators: the percentage of expense on energy of the household is disproportionate compared to the incomes (more than double the average expense on energy of the total of households); declaration of the user of not being capable of keeping the household at an adequate temperature during winter, or that due to economic difficulties

[101] https://www.boe.es/boe/dias/2017/10/07/pdfs/BOE-A-2017-11505.pdf

[102] 'Pobreza energética en España y posibles soluciones'., P. Linares, J.C. Romero, X. López-Otero. Economics for Energy, WP01/2017.

[103] https://www.ecestaticos.com/file/45aae51d7181a4dd96418a571b2e71ec/1496831519-estudio-pobreza-energetica_aca_2016.pdf

he/she was not able to pay punctually the energy bills.[104] According to the Observatory, if we consider these three indicators, in 2014, 19.2% of the households in Gipuzkoa (20,4% in Spain) suffered from some kind of energy poverty). When the household is headed by a woman, the percentage is of 32,4%

- if it is a woman aged of 65 or more, then it goes up to 38%.[105]

A study carried out by 'Ingeniería sin fronteras' (an NGO) in 2016 reveals very interesting data related to the municipality of Barcelona[106]:

- 70% of the subsidies granted by the Social Services to fight against energy poverty were granted to women.
- The risk of energy poverty is higher in single-parent families – 80% of them are made up of women.
- Following some interviews carried out by the 'Aliança contra la pobresa energetica', it seems that a large number of women that can't pay for the energy services are confronted to the dilemma of suffering energy cuts of reducing their expenses on food. Most of them decide to reduce the expenses on food, due to the huge difficulties to fight against big companies. Some consequences of this fact are the undermining of their health conditions, family breakdowns and feelings of loneliness and exclusion.

Energy access data

The National Institute of Statistics publishes on a yearly basis the Survey on Life Conditions (Encuesta de Condiciones de Vida). This includes data on the risk of poverty, disaggregated by sex, but not specifically related to energy poverty.[107]

The Observatory of Energy Poverty of Gipuzkoa offers data on energy poverty disaggregated by sex. In 2014, the number of households in the province suffering from energy poverty was 54,762 (27.139 headed by men and 27.622 headed by women).

What are the policy measures for improving gender equal access to energy services?

No specific policy measures were found for improving gender equal access to energy services. Nevertheless, as mentioned in the Policy framework question, the government implemented a 'social bonus' in order to help those with lower incomes and some specific difficulties to have access to electricity services. There is currently a proposal to implement this also for the gas energy.

Some organisations, platforms and NGOs are focused on raising awareness and on providing advice to vulnerable consumers and to those suffering from energy poverty.

The National Energy Efficiency Action Plan (2017-2020) provides information on the measures taken and envisaged to promote and facilitate the efficient use of energy by households in Spain. This Plan includes the implementation of communication measures aimed at the general public, and training measures. The

[104] Análisis cuantitativo sobre la incidencia de la pobreza energética en Gipuzkoa, 2014. Octubre 2015. SiiS.

[105] Idem, page 71.

[106] Study on Gender inequality and energy poverty 'Desigualdad de género y pobreza energética' Irene González Pijuán y Asociación Catalana de Ingeniería sin fronteras, 2016.

[107] http://www.ine.es/jaxiT3/Tabla.htm?t=9958&L=0

Institute for Energy Diversification and Saving (IDAE) is in charge of these activities.[108]

The Long-term Strategy for the energy rehabilitation in housing in Spain (2017) has been designed as an impact analysis of the instruments focused on energy efficiency in the building sector. [109] Nevertheless, there is no mention to gender issues.

There are also strategies at regional level, such as the Strategy of Urban Regeneration of Castilla y León [110]; Estratègia Catalana de Renovació Energètica d'Edificis[111]; the Road Map for Sustainable Housing at the Basque Country 2015[112] establishing objectives and indicators related to improve the energy efficiency and to reduce energy poverty in the region.

What are the key findings and conclusions looking at this country?

- There is no 'official' definition of energy poverty.
- There is no global national strategy to fight and prevent energy poverty.
- There are no disaggregated data on energy poverty and gender.
- Several initiatives have been implemented at local level to reduce energy poverty and to provide information and advice (see question on institutional framework).

What are the policy recommendations?

To implement a National Observatory of Energy Poverty that would allow to prevent energy poverty and to compare the situation in the different households.

It would be advisable to implement a National Energy Strategy, defining and covering all the aspects related to energy poverty in order to prevent it and mitigate it. It would be interesting to include a gender dimension in the strategy.

To introduce a definition in the Spanish legislation of 'energy poverty', as well as its main indicators for quantification and monitoring.[113]

To enlarge the implementation of the 'social bonus' to other energy sources. A recent study shows that '*in 2015, the expenditure on electricity in the households in Spain implies about 62% of the total expenditure on energy. This means that the social bonus does not cover 38% of the energy consumption of the household*'.[114]

To enlarge the scope of the 'social bonus'. It is still quite limited since the income criteria applied are very low.

[108] www.idae.es

[109] 'Actualización de la Estrategia a largo plazo para la rehabilitación energética en el sector de la edificación en España' (ERESEE 2017)

[110] http://www.jcyl.es/junta/cp/ERUCyL.pdf

[111] http://icaen.gencat.cat/ca/plans_programes/ecree/

[112] http://www.irekia.euskadi.eus/uploads/attachments/2415/resumen_hoja_ruta_edif_sostenible.pdf?1341994444

[113] The study on Energy Poverty in Spain and eventual solutions ('Pobreza energética en España y posibles soluciones'., P. Linares, J.C. Romero, X. López-Otero. Economics for Energy, WP01/2017), suggests that the indicators should be based on the Minimum Income Standard (MIS), since *'it offers a global approach based on the income of the households, main cause of the energy poverty. It also allows the comparison between energy poverty and general poverty'.*

[114] 'Pobreza energética en España y posibles soluciones'., P. Linares, J.C. Romero, X. López-Otero. Economics for Energy, WP01/2017.

To implement instruments with a view to increase energy efficiency in vulnerable households. It is considered that it is more likely that those living in houses older than 25 years suffer from energy poverty.[115]

Identify indicators that would allow a breakdown of the composition of the households experiencing energy poverty.

References:

- Study on Energy Poverty 'Estudio Pobreza Energética', Asociación Ciencias Ambientales, April 2016.
- National Institute of Statistics, 'Spain in numbers 2017', http://www.ine.es/prodyser/espa_cifras/2017/index.html#1
- 'Pobreza energética en España y posibles soluciones'., P. Linares, J.C. Romero, X. López-Otero. Economics for Energy, WP01/2017.
- Study on Gender inequality and energy poverty 'Desigualdad de género y pobreza energética' Irene González Pijuán y Asociación Catalana de Ingeniería sin fronteras, 2016.
- Análisis cuantitativo sobre la incidencia de la pobreza energética en Gipuzkoa, 2014. Octubre 2015. SiiS.
- Project REPEX, 'Energy poverty in Spain', http://www.niunhogarsinenergia.org/panel/uploads/documentos/estudio%20de%20pobreza%20energetica%20en%20espana%202012.pdf
- Guía de actuación para combatir la pobreza energética en Cataluña editada por el Institut Català de Energia.
- La energía como derecho. Cómo afrontar la pobreza energética. Debats Catalunya Social Propostes des del Tercer Sector. Número 38, Sept. 2014
- Datos de consumo de residencial (IDAE, 2011).
- 'Sostenibilidad en España 2017', Observatorio de la Sostenibilidad.
- 'Actualización de la Estrategia a largo plazo para la rehabilitación energética en el sector de la edificación en España' (ERESEE 2017).

[115] Idem.

SWEDEN

Country features
Population: 9.903.120 (Worldbank 2016) GDP nominal per capita: 405,921 (Constant LCU, Worldbank 2016)[116] EU member since: 1995
Policy Framework
Legal Framework: (e.g. Legal position of women and gender in the constitution, Legislation on energy services, specific laws/legal jurisdiction for gender access to energy services) Since the 1990s, gender mainstreaming has been the central policy strategy for achieving a gender-equal society. This means that a gender perspective is to be included in all policies at all levels and at all stages, by the actors normally involved in policy-making. Sweden adopted an integrated climate and energy policy framework in 2009 with defined targets for 2020 and decarbonisation priorities for 2030 and 2050. This has helped guide both policies and markets. The country is on track to achieve or even exceed its 2020 targets[117]. Sweden has undertaken reforms in the energy market in the process of transposing the Third Internal Energy Market Package, including important aspects of consumer protection, the powers and tasks of the regulatory authority and the definition of electricity and gas transmission activities. In June 2011, the government presented Bill 2010/11:153, 1 which was later endorsed by the Parliament, with measures to empower the consumer in the electricity market. The bill included a proposal for hourly metering for household consumers, for an investigation of the regulation for net metering to promote consumers' microgeneration of renewable electricity and measures to facilitate the recharging of electric vehicles as well as the creation of a national smart grid council (IEA, 2013). In 2011, the Electricity Act was amended to introduce consumer protection measures, including information requirements for electricity suppliers' and network owners' contracts with individual consumers, a definition of vulnerable customers (persons who permanently lack the ability to pay for the electricity or natural gas transferred and delivered to them for purposes that fall outside business operations). The 2016 energy agreement between the Government, the Moderate Party, the Centre Party and the Christian Democrats sets the target of 50 per cent more efficient energy use by 2030, and 100 per cent renewable energy production by 2040. The Government has adopted a target of net zero emissions of greenhouse gases by 2045. ***Institutional Framework:*** Energy policy is the responsibility of the Minister of Environment, currently Ms. Karolina Skog. Since 1954 Sweden has a minister of gender equality. The current minister is ms. Asa Regnér. Sweden has the first feminist government in the world. There is a focus on gender equality, both in national and international work. Women and men must have equal power to shape society and their own lives. Ultimately it is a question of human rights, democracy and justice. Gender equality is also a part of

[116] https://data.worldbank.org/indicator/NY.GDP.PCAP.KN

[117] IEA, 2013, Energy Policies of the IEA Countries, Sweden 2013 Review

the solution to the challenges facing society. Gender equality is a matter of course in a modern welfare society – for social justice and economic development[118].

Financial framework:

Sweden has a feminist government that is working to achieve gender equality at all levels of society. Gender equality in the budget process is of central importance in realising feminist policies. As far as possible, the budget is to promote gender equality so that all people, regardless of gender, can live a gender-equal life. Gender-responsive budgeting is the application of gender mainstreaming in the budgetary process. This means that the gender equality effects of budget policy are evaluated, that a gender perspective is continuously applied in the process and that revenue and expenditure are to be redistributed to promote gender equality. The Government Offices has clear guidelines for using a gender perspective in key work processes, for example in the budgetary process and agency governance. The work of developing gender-responsive budgeting is to be carried out continuously and systematically to ensure a clearer gender perspective in the Government's policies[119].

Energy poverty definition

Energy poverty is researched in 2015 by the FOI, the Swedish Defence and Security Research Agency. There are clear connections between security of energy supply and energy poverty. A reliable energy supply, with a balance between supply and demand, improves the possibilities for avoiding major price increases, which would be especially difficult for households with limited economic resources. This shows a clear synergy between the targets for security of supply and the protection of economically vulnerable households. There are also potential conflicts. If large economic resources are spent on avoiding cuts in supply, for example by building redundancy in production and distribution systems, this could lead to increased system costs that have to be retrieved through higher energy prices. This could be especially problematic for resource-poor consumers, who in addition are probably not among those who will gain the most from those same security improvements.

In the same report the discussion of a definition of energy poverty leads to the following statement. "The concept of energy poverty has hitherto not been used in Sweden to any appreciable extent, largely because of the nature of the Swedish welfare system. Nor is it obvious why one should talk about energy poverty when poverty in other consumer areas, such as food or transport, is not defined. In an international context, energy poverty is primarily about the ability of households to heat their homes. This is a problematic distinction since access to energy for transport is at least as important in ensuring that resource-poor groups are able to take part in the life of the community and, not least, its labour market. Thus, if one is to begin to see energy poverty as an important part of energy policy, energy for transport should be included," says FOI scientist Bengt Johansson[120].

Energy poverty indicators

No data/not known

[118] http://www.government.se/government-policy/a-feminist-government/

[119] http://www.government.se/articles/2016/10/gender-responsive-budgeting/

[120] https://www.foi.se/en/pressroom/news/news-archive/2015-12-04-foi-studies-energy-poverty.html

Energy access data
According to the awareness raising project on energy poverty www.coldathome.today, an estimate of 1.4% of the of the people in Sweden are unable to keep their homes warm during winter[121]. By international comparison, Sweden is the country with the highest gas prices for households (USD 164 per MWh) and ranges second-highest for industry customers (USD 70 per MWh), after Switzerland (IEA, 2013). The high prices are driven by both the high network cost, the high tax component (44.3% for households) and gas supply prices accounting for a quarter of the final price. In 2011, the gas supply price (24%) increased for households, mainly as the cost of natural gas increased in the range with international oil and gas prices. The network tariff accounted for 42% of the price, while energy tax and VAT together represented 34%. The total cost of natural gas for a household in 2011 amounted to SEK 1.10 per kWh for a household with gas heating, with a yearly consumption of 5 500 to 55 000 kWh per year. This is mostly because of the small size of the Swedish gas market and the limited access to other EU gas wholesale markets, plus a low diversification of the import portfolio (Sweden relies 100% on Danish gas imports and prices). Distribution companies tend to be small, and large consumers are few, implying that the fixed costs of the gas network are spread among fewer customers than in many other countries. In 2011, 281 households switched natural gas supplier, a 6% decrease over the previous year. The total number of switches continues to remain at a low level and is equivalent to almost 1% of the total number of domestic customers[122]. Retail prices for electricity have been increasing over the past years. In 2011, for a household customer in an electrically heated detached house, the electricity bill consisted of supply costs of 49%, network cost of 15%, while energy taxes and VAT accounted for 36%. The total electricity cost for a household in 2011 amounted to SEK 1.37 per kWh, or SEK 27 400 (EUR 3 200) for the year (IEA, 2013).
What are the policy measures for improving gender equal access to energy services?
<u>Poverty relief policy measures</u> Swedish energy poverty policy is embedded in the poverty policy of social policy. Social insurance is an important part of the Swedish security system and applies everyone living or working in Sweden. Social policy is one of the policy areas that translate most public resources. Almost a third of GDP in Sweden is reallocated for social policy purposes. The Social Policy nr. 107 refers to direct or indirect government measures to ensure individual individuals profitable living conditions, "welfare", or to solve or prevent social problems. The measures may include general cost support, subsidies, price controls and other. Other policy areas are also important for support to economically vulnerable, eg labor policy. It is acknowledged that single parents, particularly women, often have weaker finances than parents who live together. The Government has therefore raised the national maintenance support that is paid to single parents who do not receive child support from the other parent. The Government also proposes to raise the basic level of parental benefit, which would mean a higher amount of parental benefit for people on very low or no incomes. The Government has also submitted proposals to abolish the municipal child-raising allowance, as it tends to counteract economic equality between women and men. The child-raising allowance is a cash payment that municipalities can give to parents with children aged 1–3 years, if the parent

[121] http://www.coldathome.today/where-does-fuel-poverty-exist-1/

[122] IEA, 2013, Energy Policies of the IEA Countries, Sweden 2013 Review

stays at home with the child instead of the child going to preschool. More than 90 per cent of the parents who receive the child-raising allowance are women.

HR-policy measures to enrol more women in energy jobs

On 7 November 2017, Sweden and the International Energy Agency (IEA) hosted the Women in Clean Energy side event in Paris to attract attention and generate engagement in the importance of promoting women's participation and leadership in energy transition. Representatives of governments, international organisations and the business world took part. Sweden, Canada and Italy initiated C3E and the cooperation is linked to the IEA. C3E is one of the first international energy initiatives to focus on skills supply and strengthening women's leadership and participation in the clean energy revolution.

Energy transition and energy consumption

The Swedish energy efficiency policy relies on local and regional initiatives, developed on the basis of regional energy and climate strategies and supported by work of the fourteen regional energy agencies and the Swedish Energy Agency. The agencies cooperate with the county administrative boards, the municipalities, municipal advisors and companies in the region to initiate projects on energy efficiency and renewable energy. Sweden is a role model for the creation of municipal energy and climate advisory services which are provided to households and small businesses.

Tax relief

Electricity has been taxed in Sweden since the 1950s. In 1991, the carbon dioxide taxation was introduced in addition to the already existing energy tax on fossil fuels. Sweden has the world's highest CO2 tax imposed on the non-trading (non EU-ETS) sectors and households/services. In December 2009, energy and CO2 taxation was reformed with a view to streamline tax levels towards the reduction of GHG emissions and the achievements of the 2020 targets for renewable energy and energy efficiency. Households energy tax remain 100%, but now the energy tax is based on energy content (EUR 0.008 per kWh). 100% CO2 tax is remained unchanged.

Gas security

Swedish emergency response policy for natural gas is based on the new EU Regulation No 994/2010, the Swedish Natural Gas Act and Natural Gas Ordinance which set statutory powers for balancing the domestic gas network in times of crisis and the standards under which supplies to protected customers are to be safeguarded. EU Regulation 994/2010 and the Natural Gas Ordinance set the circumstances under which supplies to protected customers are to be safeguarded. These include: a partial disruption of supplies for up to 24 hours; supplies during the winter period (running from the beginning of December to the end of February); and during periods when temperatures are 4°C to 5°C less than the normal winter temperatures (1-in-20 winter). In accordance with EU rules, Sweden defines protected customers as all households and small consumers connected to the gas distribution network. Approximately 34 000 customers fall under this definition and collectively they account for 2% of total natural gas consumption (IEA, 2013).

Price comparison:

According to the IEA Swedish Energy Policy review of 2013, price transparency and supplier switching remain insufficient to stimulate competitive gas prices to household consumers. The competition and regulatory authorities should regularly assess progress, identify barriers and monitor price developments. The online price comparison tool of the Energy Markets Inspectorate, the so-called Elpriskollen, should be extended to monitor gas prices.

At the start of the deregulation of the electricity retail market in 1996, around 78% of households had switched supplier or renegotiated their contract. In 2011, out of the total 5.2 million domestic customers (4.4 million households), more than 1.6

million, or 37%, were active, either by renegotiating their contract or by switching electricity supplier. That means that the majority of Swedish domestic customers did not switch suppliers and mostly stayed with open-ended contracts. However, there is a trend away from open-ended towards shorter (one to three years) fixed contracts (42% of customers), which avoid price spikes but allow for medium-term price savings. Retail tariffs for domestic customers in Sweden are largely single tariffs; there are only a few time-related or dynamic tariffs. In May 2012, a proposal for reducing the proportion of customers with open-ended contracts was approved (IEA, 2013). In the 2016 Energy agreement one of the aims is to further implement measures needed to achieve effective demand flexibility – that is, that customers can participate fully in the electricity market [123].

Smart meters

Since 1 July 2009, distribution system operators (DSOs) are obliged to read electricity meters of household customers (with fuse of 16 to 63 amperes) every month. In Sweden, the first generation of smart meters, enabling remote readings, are already installed in around 90% of Swedish households. Industrial and commercial consumers (fuse above 63 amperes) have their consumption read on an hourly basis.

On the retail market, the country has rolled out the first generation of smart meters to almost all household consumers and introduced the choice of hourly metering of their electricity consumption. Sweden is regarded as a leader in smart grid technologies with large-scale demonstration, EU-wide and international technology co-operation. The government set up a Smart Grid Council to prepare a national action plan.

What are the key findings and conclusions looking at this country?

The FOI research team believe that, irrespective of whether or not energy poverty is a relevant concept for Sweden, it is important to be conscious of the role that this aspect of poverty plays within the EU's energy policy and it is therefore important to follow developments there since they will inevitably have an effect on Swedish energy policy. The concept also brings into focus aspects of energy distribution policy, which in turn is important in deciding which policy moves are both feasible and appropriate.

What are the policy recommendations?

Since Sweden is used as a reference case study, the research team was unable to analyse Swedish policy documents and to interview key informants on Swedish energy poverty policy.

A remarkable policy recommendation of the FIO in their energy poverty report, is to include transportation to the energy poverty definitions. They argue that transportation energy is seldom considered in energy poverty policy, which can be a problem, since the availability of transportation services can limit commuting options and the potential for rich leisure time.

Furthermore, the poverty policy in general is embedded in the social policy of Sweden. There is extensive support for vulnerable citizens in Sweden to ensure their basic needs and proper living conditions. Energy poverty relief programmes are financed by the social policy.

References:

IEA, 2013, *Energy Policies of the IEA Countries, Sweden 2013 Review*
FIO, 2015, *Energy poverty, security of supply and public action,* FOI-R--4020--SE

[123] http://www.government.se/49d8c1/contentassets/8239ed8e9517442580aac9bcb00197cc/ek-ok-eng.pdf

UNITED KINGDOM

Country features
Population: 65.64 million (2016) GDP nominal per capita: €33842 (2016) EU member since: 1973
Policy Framework
Legal Framework: The United Kingdom does not have one specific constitutional document. The relationship between the individual and the state and the functioning of the legislature, the executive and the judiciary are governed by laws (passed either by parliament or established through court judgments) and principles and conventions (i.e. how it was done in the past). The UK has ratified CEDAW and the Beijing Platform of Action. In terms of women's legal position in the UK, there are range of acts and laws covering all aspects of society including women's rights which are updated from time to time. What can be considered landmark legislation which is still inforce today includes the Equal Pay Act of 1970, the Sex Discrimination Act of 1975 (which protects individuals from being discriminated against in employment, vocational training, education, the provision and sale of goods, facilities and services, premises and the exercise of public functions due to their sex/gender) and the Abortion Act 1967. In 2010 the Equality Act was passed by Parliament to codify the complicated and numerous array of Acts and Regulations, which formed the basis of anti-discrimination law in the UK. The Act has the same goals as the four major EU Equal Treatment Directives, whose provisions it mirrors and implements. While on the statute books women and men in the UK are equal, in practice there continue to exist many gender gaps (e.g. wages which translate in later life into differences in the level of private pensions – the state pension is the same for women and men). The intention of the UK to withdraw from membership of the EU creates some uncertainty, however, the intention is to comply with existing EU legislation and the obligations which flow from EU law for an unspecified period after 2019. ***Institutional Framework:*** *Ministry in charge of Energy*: Department for Business, Energy and Industrial Strategy (DBEIS). Since 1999 some aspects of domestic policy, which includes energy/fuel poverty, are devolved to the governments in Scotland, Wales and Northern Ireland. There is no devolved government for England so the Department for Business, Energy and Industrial Strategy is responsible for policies linked to energy poverty in England. DBEIS established an advisory committee to the Minister of Energy: Committee on Fuel Poverty. The Committee's role is to advise on the effectiveness of policies aimed at reducing fuel poverty, and encourage greater co-ordination across the organisations working to reduce fuel poverty. As of July 2017 there were six members (4 men and 2 women) from the Energy Industry and Civil Society. *Ministry in charge of Gender issues*: There is no separate Ministry for Gender or Women. The Ministry responsible for providing advice on all forms of equality (including gender, age, race, sexual orientation and disability) to other UK government departments is the Government Equalities Office which is located in the Department of Education. There is a post of Minister for Women and Equalities – all but one of whom have been women. The current minister is a member of the

Cabinet which is derived from her other job which is the Secretary of State for Education.

Stakeholder organisations, Working groups, Institutionalised participation initiatives:

National Energy Action (focusing on England, Wales and N. Ireland) and Energy Action Scotland are two charities (civil society organisations). Both organisations are committed to eradicate fuel poverty, campaigning for greater investment in energy efficiency to help vulnerable people or those on low income be able to afford to heat their homes. The provide advice to householders and to installers of energy efficiency services aiming to improve standards. They also run energy efficiency demonstration projects.

Financial framework:
The UK Government provides support to identified vulnerable groups including:

- There is an annual winter fuel allowance paid to all households with citizens aged over 60 (currently £200). The rate is increased at 80 (£300). For two people aged 60+ sharing a house they each receive only half of the allowance (£100 each). This payment does not affect any other state benefits.
- Grants for free home insulation regardless of who owns the property and no means testing for the over 70s. There is an absolute right for them to receive free cavity wall and loft insulation or free top-ups to modern standards.
- The Warm Home Discount Scheme provides up to £140 off electricity bills for winter 2017 to 2018. Which individuals actually qualify from the vulnerable groups (e.g. low-income households) depends on the discretion of the electricity supplier which also has to be part of the scheme. There are a limited number of payments possible.
- Individuals in receipt of a range of state benefits including Attendance Allowance, Disability Living Allowance or Employment and Support Allowance (Incapacity Benefit) Single Parent Allowance or households with young children with an annual income of less than £14,600 may be entitled to cold weather payments for periods of exceptionally cold temperatures. These vulnerable groups may also be entitled to the insulation grants.
- Flexible payment options for customers in fuel debt
- A disconnection safety net, ensuring no vulnerable customer will be knowingly disconnected.

Energy poverty definition

The UK central and devolved governments uses the concept of fuel poverty rather than energy poverty.
The definition used in England is: a household is considered to be fuel poor if:

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

The devolved governments use the definition that household is considered fuel poor if it would need to spend more than 10 per cent of its income on adequate energy in the home. The figure of 10 per cent can be considered rather arbitrary – it is based on an assessment using 1988 data which at that point in time did represent 30% of the lowest income households were spending 10% of their income on energy when the average was 5%. Since then these figures have changed and the definition adjusted to per cent of income rather than expenditure. Implicit in the definitions is the inclusion of all energy services not only heating.

Three factors that influence fuel poverty are considered to be: Household Income, Household Energy Requirements, and Fuel Prices. The household energy requirements are considered to be based on (i) economic circumstances of householders (for example, it is assumed that if they are unemployed or retired they will be at home for longer periods of the day than people in employment); (ii) the heating system and the type of fuel(s) used; and(iii) the dwelling characteristics.
Households should be able to maintain an adequate standard of warmth which is defined as 21ºC for the main living area and 18 ºC for other occupied rooms. (Department for Business, Energy and Industrial Strategy, 2017: 8)

Energy poverty indicators

In England, Fuel Poverty is modelled using data from the English Housing Survey (EHS). The EHS is an annual national survey of people's housing circumstances, household income and the condition and energy efficiency of housing in England. Approximately 12,000 households (private and social), selected randomly from postal addresses, are interviewed. Around half of those households have a separate detailed physical inspection of properties by professional surveyors. Households are surveyed for two consecutive years – so long term trends are taken as indicative since the sample composition changes. It is also not possible to give an aggregate picture for the UK since the data gathering method and metrics differs (e.g. Scotland uses a higher ambient room temperature) for the four nations and other contextual factors vary (e.g. Northern Ireland has a greater reliance on heating oil than the other three).

The EHS uses gender neutral language and does not refer to a 'head of household'. Instead questions are collected from a household member who has been identified as the Household Reference Person (HRP) or his/her partner. For some of the questions the HRP is asked about all the individuals in the household members while others are asked of the HRP only. Data on a range of intersectionality dimensions within a household are collected – although what is included changes from time to time (for example, sexual identity is no longer asked). In 2016, the British Prime Minister announced an audit of public services to highlight racial disparities which includes energy poverty. The DBEIS points a difficulty in giving an accurate picture since there are households with members of different racial identities. Nevertheless, the DBEIS presents fuel poverty data in terms of household tenure (private/social rented and owner occupier), household composition, ethnicity, age and employment status. There is no gender disaggregated data presented. The DBEIS uses the concept of 'fuel poverty gap' to measure the depth of fuel poverty. The fuel poverty gap is the amount of extra money (in real terms value) that households in fuel poverty need to spend in order to cross the fuel poverty threshold.

Energy poor households tend to be living in dwellings with no insulation (43% of fuel poor) and those built before 1965 (75% of fuel poor). Ownership of the dwelling shows differentiation: households with highest depth of fuel poverty are in the private rented sector (£410) and lowest for the social housing (£175 for local authority homes).

In terms of demographics depending on which metric is used different conclusions are reached: when using the fuel poverty gap is most severe in multi-person households (fuel poverty gap of £493), then couples with dependent child(ren) (£412 fuel poverty gap). However, if the percentage of households is taken as a metric single parent households are the largest group (23.6%) – although these have the lowest fuel poverty gap. In terms of ethnicity, the number of ethnic minority households living in fuel poverty (16.4 %) is higher than the proportion of white households living in fuel poverty (10.4 %). Age as characteristic is measured in two ways: the youngest and the oldest family member. The largest

percentage of households in energy poverty is found in those in which the oldest member is aged 16 to 24 years (27.6%). For the age when many people will be able to draw on pensions there are two bands: 60 to 74 and 75+. Between 2010 and 2013 there had been a decrease in the numbers in energy poverty but after 2013 the numbers for the 75+ group began to increase. The decrease for the 75+ is attributed to the Warm Home Discount policy and the higher winter fuel allowance which starts at 75, although no explanation is given for the increase. Households were all members are in full-time education are the largest percentage in fuel poverty followed by unemployed and economically inactive households.

Payment method is also significant – households using pre-payment meters are more likely to be fuel poor.

The Warm Front Programme has been replaced by a market approach (The Green Deal) in which consumers pay for their energy efficiency improvements by taking out a commercial low-interest, private loan scheme which they can pay back through their fuel bills. This has run into a number of problems with a low take up of the scheme (only around 1% of households which made energy efficiency improvements used the loan scheme) and has had to be relaunched (although it is too early to evaluate this new version). In 2014, the Government put in place a new fuel poverty target: to improve the energy efficiency of fuel poor homes, by getting as many households as reasonably practicable to a specified minimum rating by 2030.

It is also possible that a change in a benefit payment for example for housing to compensate for a rent rises is counted as an increase in income and as a consequence they are taken out of energy poverty although there has been no change in the households energy needs and payments. There is also some concern that the current definition of energy poverty may understate the energy poverty of larger households relative to smaller households (Sefton and Chesshire (2005) cited in Boardman (2010).

Energy access data
Energy Poverty data are presented for a number of social characteristics (that is, household tenure (private/social rented and owner occupier), household composition, ethnicity, age and employment status). There are no sex-disaggregated data presented although survey respondents in households with multiple family members can be female or male; questions are posed about all household members use of energy.
What are the policy measures for improving gender equal access to energy services?
There are none. However, the extra winter fuel allowance when an individual reaches 80 years of age could be interpreted as beneficial to older women who are the majority sex in this category and are regarded as more vulnerable to the cold.
What are the key findings and conclusions looking at this country?
The UK has considerable experience in assessing energy poverty from which it emerges how complicated it is to make definite categories of households and determine whether or not they are energy poor. There are households which would not be considered income poor but are energy poor because of their high energy requirements. There are also households which use woodstoves for space heating - a condition in the South which would be linked to energy poverty – who are not income poor but do so for politico-environmental reasons. Also the way that households are constructed is complex and do not fall into simple categories such as two generation families and single person households. Urban households show a much greater variety including immigrant and flat sharing.

The figure used as an indicator of households living in energy poverty (10% of expenditure on energy) appears to being widely adopted (although it is now based on income). This figure can be considered as rather arbitrary since it represents a 'snapshot in time' and the statistics used to arrive at this percentage has changed. The percentages of households is derived from a model in which small changes in assumptions can influence the numbers and distribution of the energy poor (Sefton and Chesshire (2005) cited in Boardman (2010)).

There is a growing body of academic research by social scientists based in UK universities on energy poverty in the UK – although with very little from a gender perspective.

The UK government considers that there are three key drivers of energy poverty: household incomes, household energy efficiency, and fuel prices. However, this is contested by researchers as 'too simplistic'. Concentrating on numerical indicators hides the reality of lives lived in fuel poverty or what influences energy use in households. Social attitudes and behaviour may be as, or possibly more, important than energy prices in stimulating households to implement energy efficiency improvements. However, a significant number of households in energy poverty are living in private rented accommodation in which the tenant has no control over improvements – either if they happen or what form they take. The latest government energy efficiency programme allows private landlords to pass on the cost of improvement to tenants in higher rents which can result in the tenant being financially no better off.

The Warm Front programme introduced in 2000 targeted households with members aged 60+ which is credited with a reduction in excess winter mortality in this age group. While sex-disaggregated data is not collected for this programme, it is not unreasonable to assume that women, who form the majority in this group would benefit. The investment made in improving energy efficiency in 2 million households is seen not only as an important measure to reduce energy poverty but also a cost effective means of reducing greenhouse gas emissions.

It appears that single person households (in work or not) are more likely than not – in part because there is no-one else to share factors which affect income such as sickness or unemployment – the effects on income are immediate and they have energy consequences. Single person households is a growing group (6 million – 29% of total in 2007). Their situation is compounded when their income is low and their residence has low energy efficiency. At 2007 prices virtually all households which exhibit these combined characteristics are living in energy poverty.

What are the policy recommendations?

1. The Government should collect sex-disaggregated data on energy poverty to ensure that there are gender-aware measures for reducing energy poverty and that they are working.
2. To build a data base to identify the energy efficiency of all homes. This can assist in targeting the lowest energy efficiency buildings to improve the energy efficiency as part of the transition to a low carbon society. This can help reduce the stigmatism of being identified as living in energy poverty.
3. To extend the definition of fuel poverty beyond an income metric to include a consensual metric.
4. To use the term 'energy poverty' rather than 'fuel poverty' since this changes the emphasis from heating to energy services.

References:

Boardman, B. (2010) *Fixing Fuel Poverty*. Earthscan.

Department for Business, Energy and Industrial Strategy (2017)Annual Fuel Poverty Statistics Report: England (2015 DATA).

National Audit Office. (2003) Warm Front: helping to combat fuel poverty. London: The Stationery Office. Available at: http://www.nao.org.uk/report/warm-front-helping-to-combat-fuel-poverty/.

National Audit Office (2009) The warm front scheme. London: The Stationery Office. Available at: http://www.nao.org.uk/report/the-warm-front-scheme/.

Sefton, T. and Chesshire, J. (2005) *Peer Review of the Methodology for Calculating the Number of Households in Fuel Poverty in England*. Final Report to DTI and DEFRA.

Further remarks

The UK is the country with the most comprehensive studies into energy poverty both by government and academics. However, both types of data are not sex disaggregated. Caution should be taken when making inferences about gender and energy poverty in the rest of the European based on the UK data since many factors of different, such as state of the housing stock and the climate. For example there is more attention in the UK to heating than cooling whereas the latter may be considered to a significant problem in the Mediterranean countries and in some countries there is a need for both.

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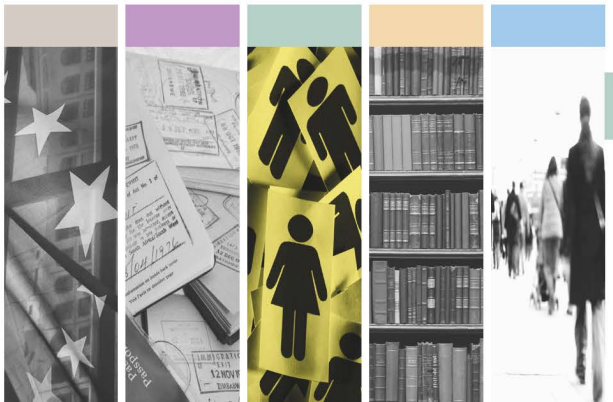

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