Study on addressing energy poverty in the Energy Community Contracting Parties

Final presentation

Tuesday, November 23, 2021

Agenda

- **Introduction**
- Energy poverty in EU regulation
- Status quo in CPs
- Energy vulnerability vs energy poverty
- Proposed definition of energy poverty
- Drivers of energy poverty
- Measuring energy poverty
- Selection of appropriate indicators
- Preliminary assessment of energy poor households
- Proposal of measures
- Conclusion

Introduction

- **What this study IS about:**
  - Analyzing the **existing legal framework** in CP regarding energy poverty
  - Detecting **existing policies** and **resources allocated** to aiding energy vulnerable / poor households
  - Proposing **adequate definition** of energy poverty
  - Analyzing the status quo in each CP in respect to the **drivers of energy** poverty to identify major causes of energy poverty
  - Defining **indicators** to measure aggregate energy poverty
  - Proposing the **measures** to aid energy poor.

Introduction

- **What this study is NOT about**:
  - Not defining the final number of energy poor
  - Not prescribing the final list of possible measures to aid energy poor.

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Directive 2009/72/EC and Directive 2009/73/EC

- Directives require Member States (MS) to ensure **adequate safeguards for vulnerable consumers**
- Each MS "shall define the concept of **vulnerable consumers** which may refer to **energy poverty** and, inter alia, to the **prohibition of disconnection** of electricity/gas to such consumers in critical times".
- MS "shall take appropriate measures to protect final consumers in **remote areas** who are connected to the electricity/gas system."
- "MS shall take **appropriate measures**, such as formulating national energy action plans, **providing benefits** in social security systems to ensure the necessary electricity/gas supply to vulnerable consumers, or providing for **support for energy efficiency improvements**, to address energy poverty where identified, including in the broader context of poverty."
- These measures should "**not impede the effective opening of the market**".

Directive 2019/944/EU

- Concept of vulnerable consumers may include “income levels, the share of energy expenditure of disposable income, the energy efficiency of homes, critical dependence on electrical equipment for health reasons, age or other criteria.”
- Directive requires that the Member States “establish and publish a **set of criteria**, which may include low income, high expenditure of disposable income on energy and poor energy efficiency” that **define energy poverty.**

Regulation (EU) 2018/1999 (The Governance Regulation)

- Regulation requires that MS "**assess the number of households in energy poverty** taking into account the necessary domestic energy services needed to guarantee basic standards of living in the relevant national context, …".
- Regulation stipulates that if a MS has a significant number of energy poor households, the MS should develop "a national indicative objective to reduce energy poverty"
- Such MS are to "outline in their integrated national energy and climate plans, the **policies and measures**, which address energy poverty, ….,."
- Article 24 requires that MS include in their integrated national energy and climate progress report the following: (a) information on progress towards the national indicative objective to reduce the number of households in energy poverty; and (b) **quantitative information on the number of households in energy poverty**, and, where available, information on policies and measures addressing energy poverty.

Energy efficiency related legislation

- The Energy Efficiency Directive 2012/27/EU
  - Directive stipulates that "…. a share of energy efficiency measures [are] to be implemented as a priority in households affected by energy poverty or in social housing".
- Directive 2018/844 on the energy performance of buildings
  - Member States must outline "relevant national actions that contribute to the alleviation of energy poverty"

Recommendations of the European Commission on energy poverty

- "E*nergy poverty is a situation in which households are unable to access essential energy services, where adequate warmth, cooling, lighting, and energy to power appliances are essential services that underpin a decent standard of living and health*."
  - These services are considered necessary as they are essential for social inclusion.

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Definitions and measures

- **Definitions**:
  - Current definitions target primarily individuals with health issues or those of low income.
  - Other aspects and drivers of energy poverty (e.g. energy efficiency of homes, gender, energy needs) are considered.
  - **Consequently, a certain share of energy-poor households not meeting current criteria are not eligible for support.**
- **Measures**:
  - Income supplementing schemes based on health, income, disability
  - Protection from disconnections (in winter months)

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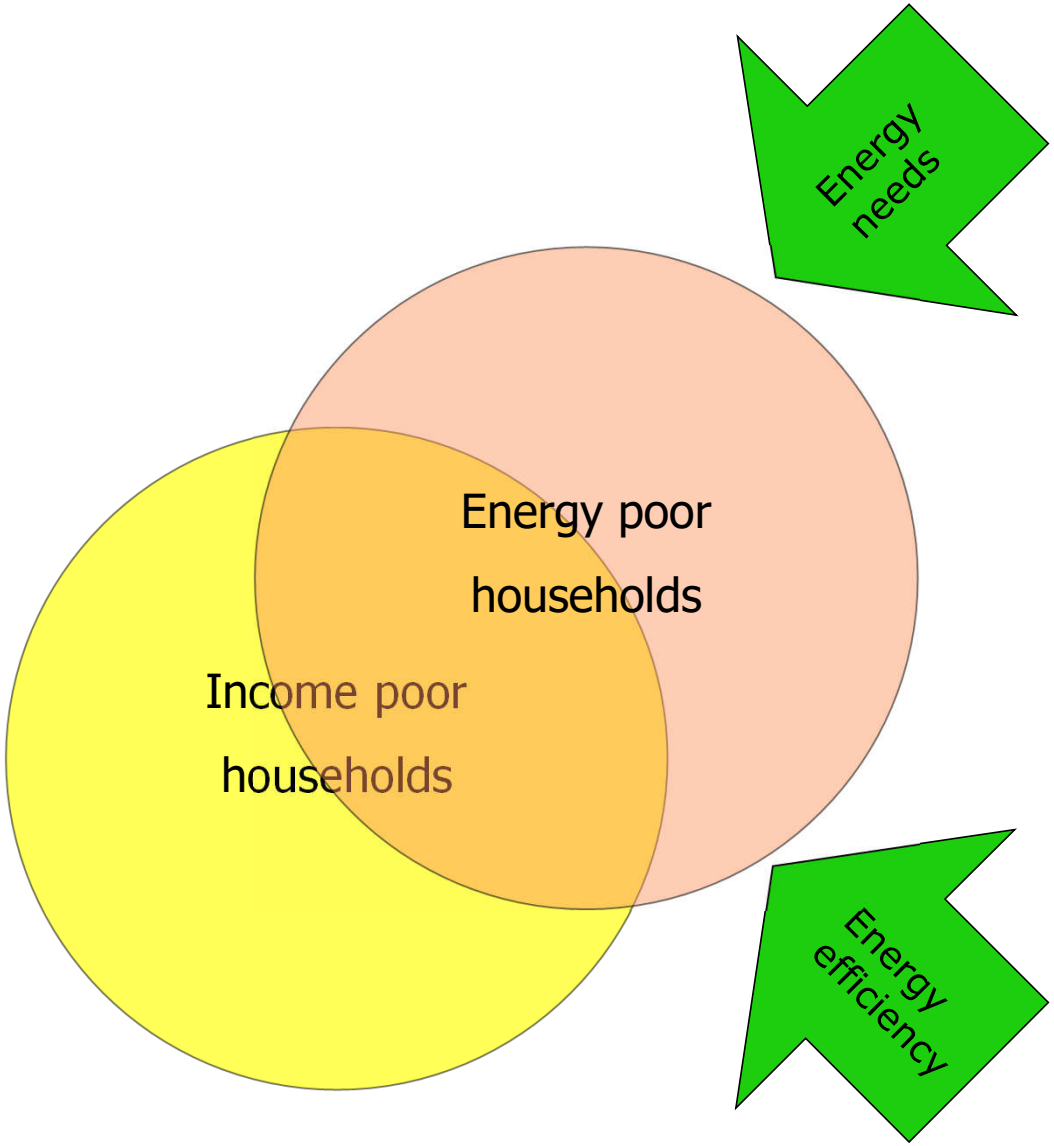
Vulnerable consumers

Energy poor consumers

Energy poverty is inter-sectoral – requires working across different government departments and involving multiple stakeholders

Is not a subset of income poverty, but rather overlaps with it



Energy vulnerability vs energy poverty

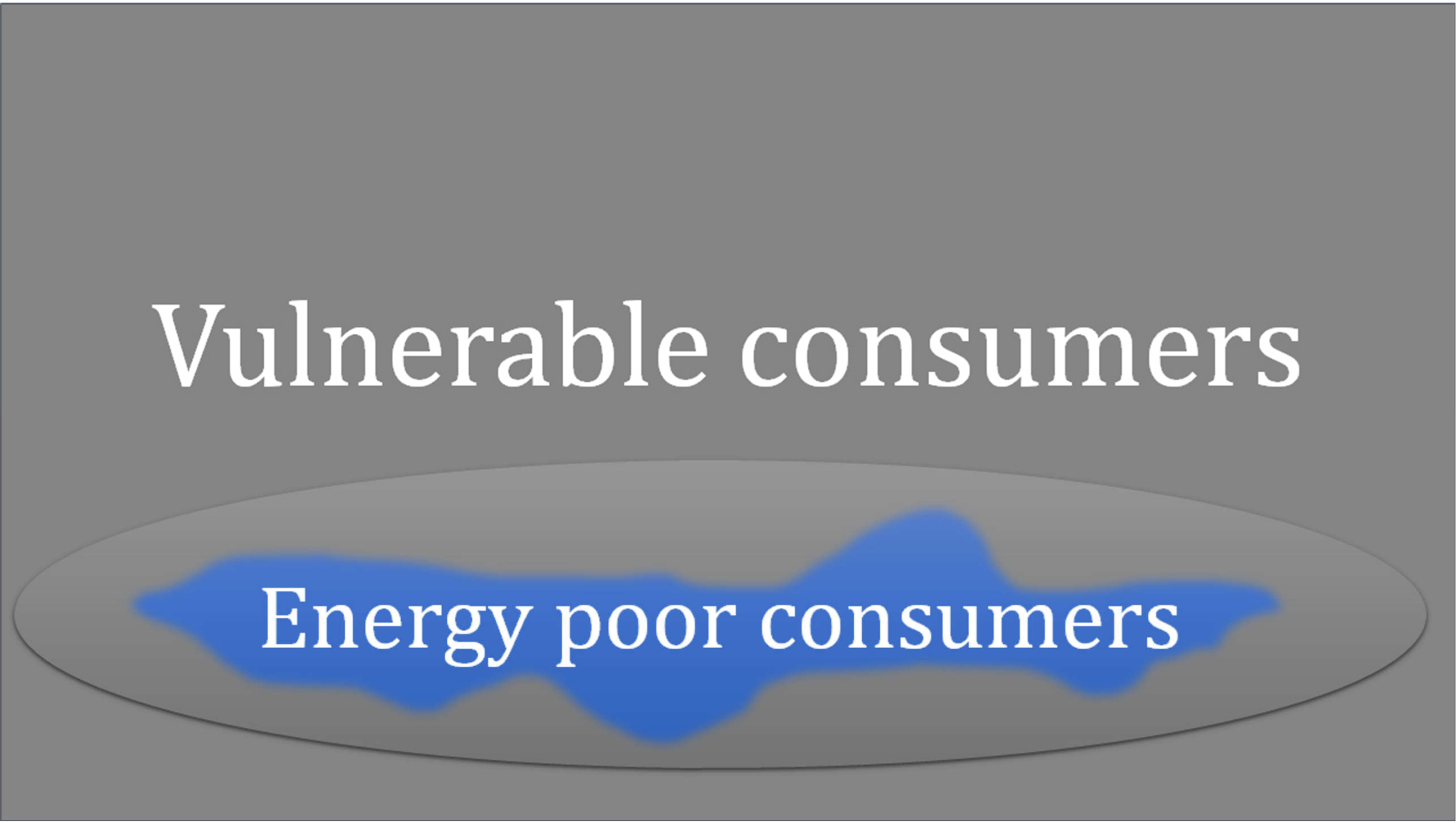
- Current measures to protect energy-poor consumers tend to focus on low-income households.
- Nevertheless, the demographics of energy poverty are always broader than demographics of people with low incomes
  - **Energy poverty is not just caused by low incomes, but is also dependent on energy inefficient housing, energy needs, and energy supply**
  - Generally, the greater the energy poverty problem in a country, the greater the number of households who are not income-poor but maybe energy-poor.

Energy vulnerability vs energy poverty

- Because energy poverty has many causes, it is difficult to address it using a single policy measure.
  - Nevertheless, this is exactly what most CPs do.
- Most if not all countries in the Energy Community region have relatively robust and extensive social support systems.
  - The easiest measures to implement involve adding income support for energy-poor households to the existing social welfare system.
- Selecting energy-poor households based on their participation in the social welfare underestimates the extent of energy poverty
  - As already stated, energy poverty is caused by a plethora of reasons, income being just one of them.
- Therefore, current protection mechanisms for vulnerable consumers that rely only on protecting the low-income consumers fail to capture all energy-poor consumers
  - More than one criterion has to be used to identify energy poverty

Energy vulnerability vs energy poverty

- Energy vulnerable and energy poor
  - Energy vulnerability – wider concept than energy poverty
  - Energy vulnerable consumers are consumers who are at the greater risk of becoming energy-poor due to low income, health, disability, gender, etc.
  - Energy vulnerable consumers do not necessarily need to be energy poor.
- Energy-poor consumers are a subset of energy vulnerable consumers, and they are characterized by having difficulty in securing adequate levels of energy services, again due to a multitude of reasons (income, health, dwelling characteristics, etc).


Vulnerable consumers
Energy poor consumers

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What is energy poverty?

- Energy poverty is commonly defined as the inability to **secure adequate** levels of **energy services** in the home
  - Secure: inability to pay (affordability), lack of infrastructure (energy access)
  - Adequate: material (e.g., room temperature) and social (limiting some activities)
  - Energy services: space and water heating, space cooling, lighting and appliances. Depend upon the efficiency.

Proposal of the definition of energy poverty

Energy poor consumer is a consumer that cannot secure adequate warmth, cooling, lighting, and energy to power appliances that are required to provide essential services that underpin a decent standard of living and health.

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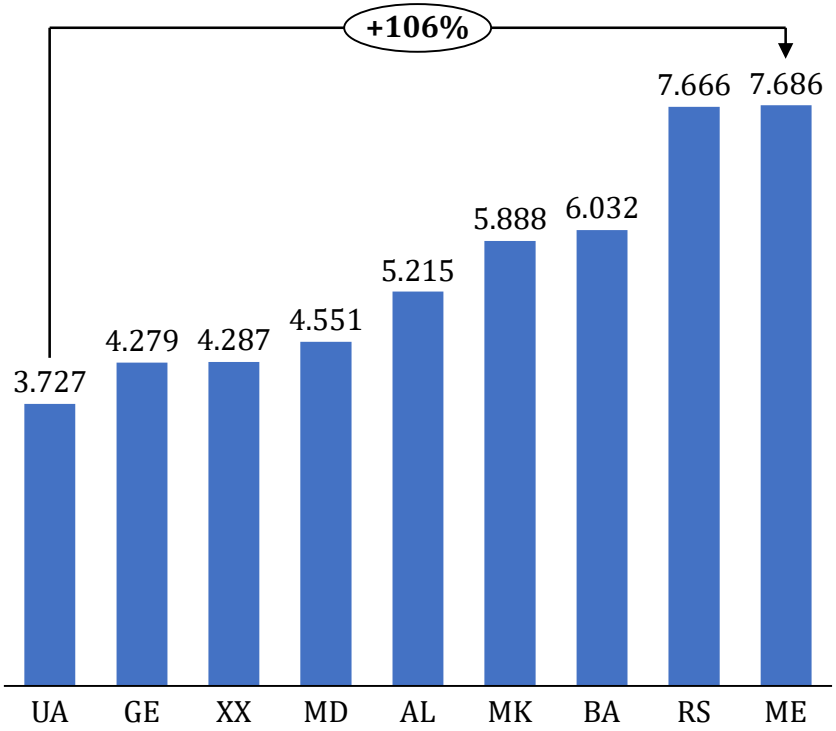
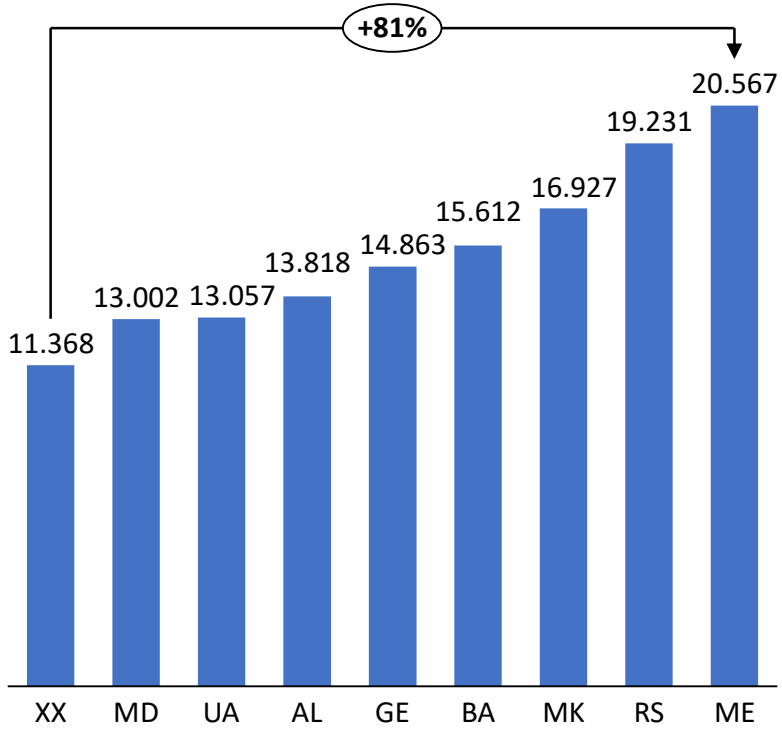
Drivers of energy poverty

- Selected drivers:
  - **Macroeconomic development**: GDP per capita, unemployment level, average net wage, and number of households that live on less than USD 1.9 per day.
  - **Final energy consumption of households**
  - The **availability of different energy sources**
  - **Energy prices**
  - **Climate**
  - **Housing efficiency**

GDP per capita



GDP per capita (current US$) for 2020

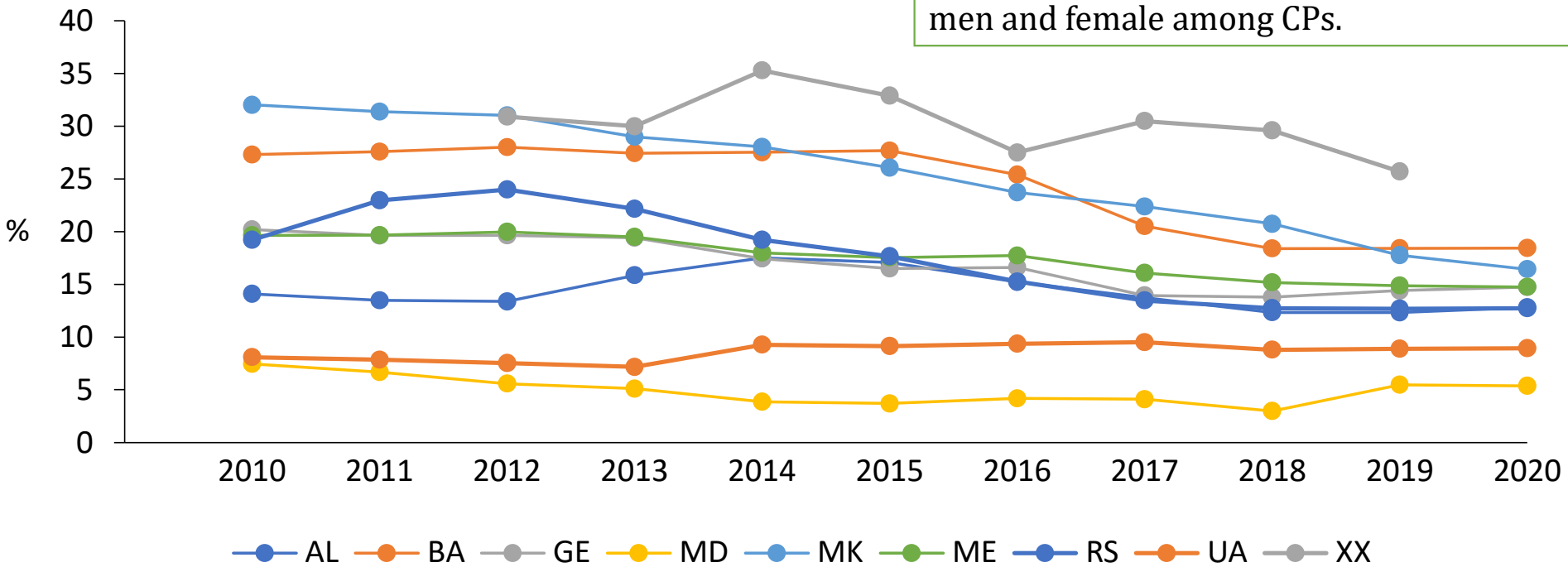


GDP per capita in USD for 2020, PPP (constant 2017 international USD)

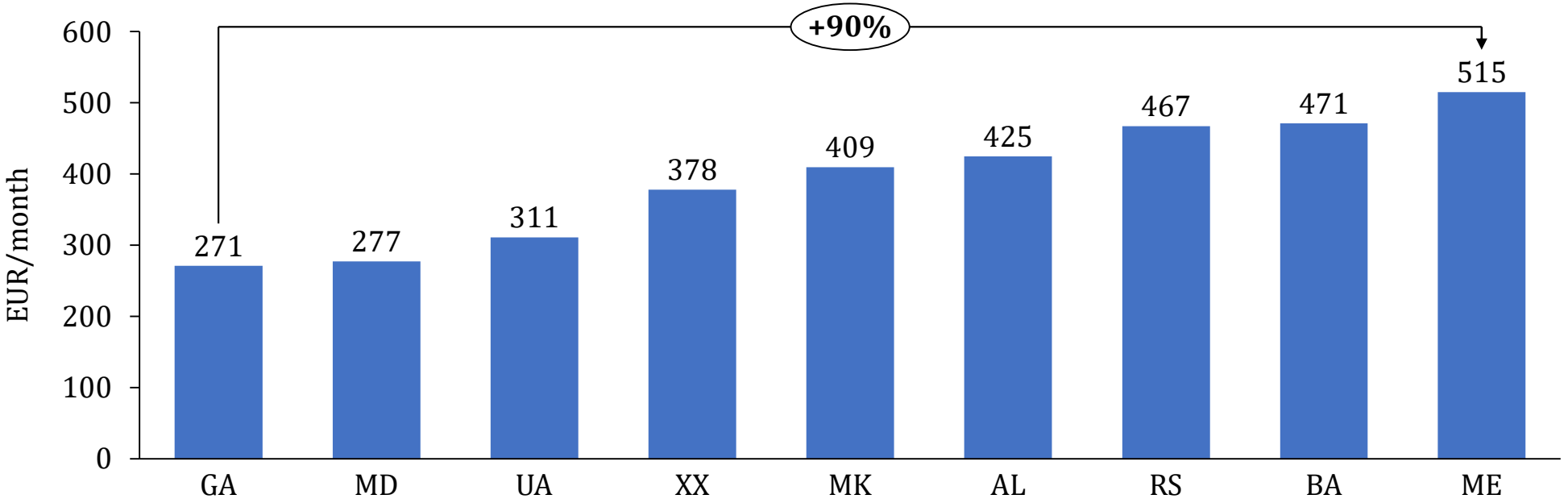
Unemployment level

The average level of unemployment in 2019 mounted to 14.5%, with a median of 14.4%. Also, there was no observed increases in unemployment among CPs during the COVID-19 pandemic in 2020.

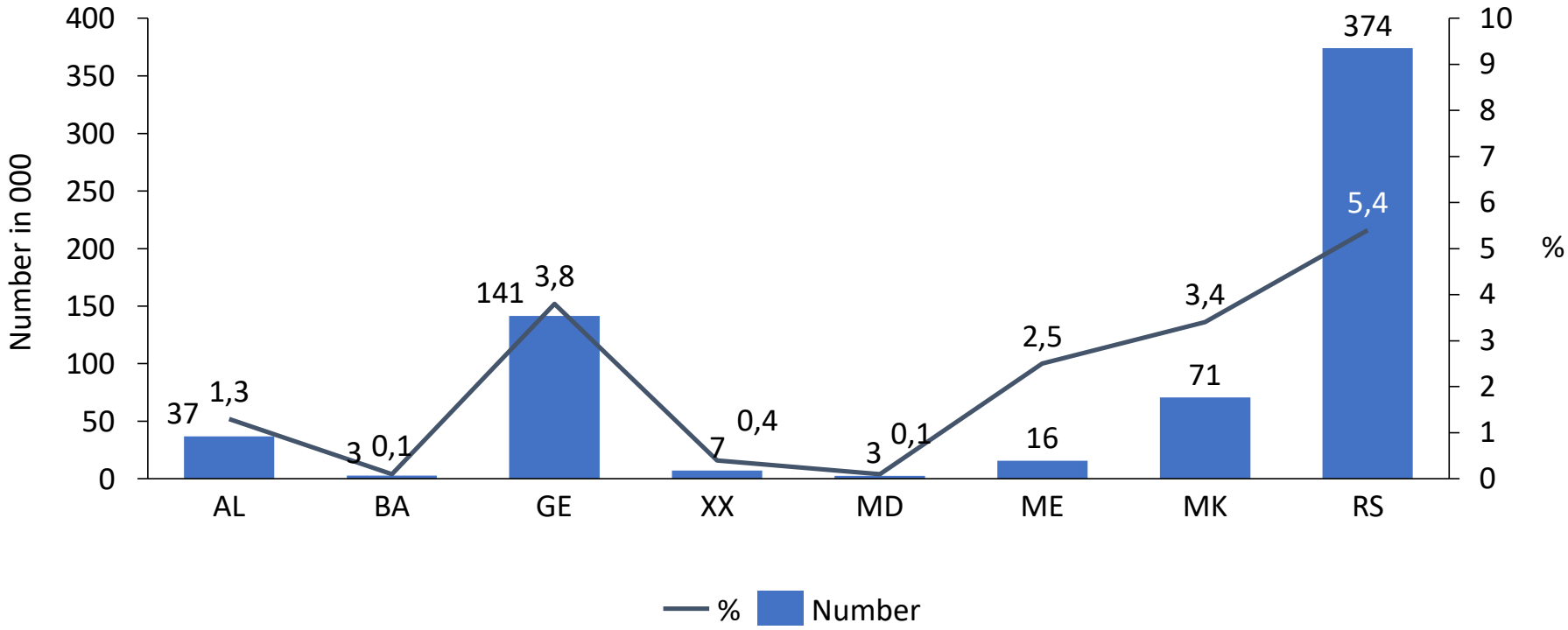
Difference in unemployment level between men and female among CPs.



Average net monthly wages during 2019

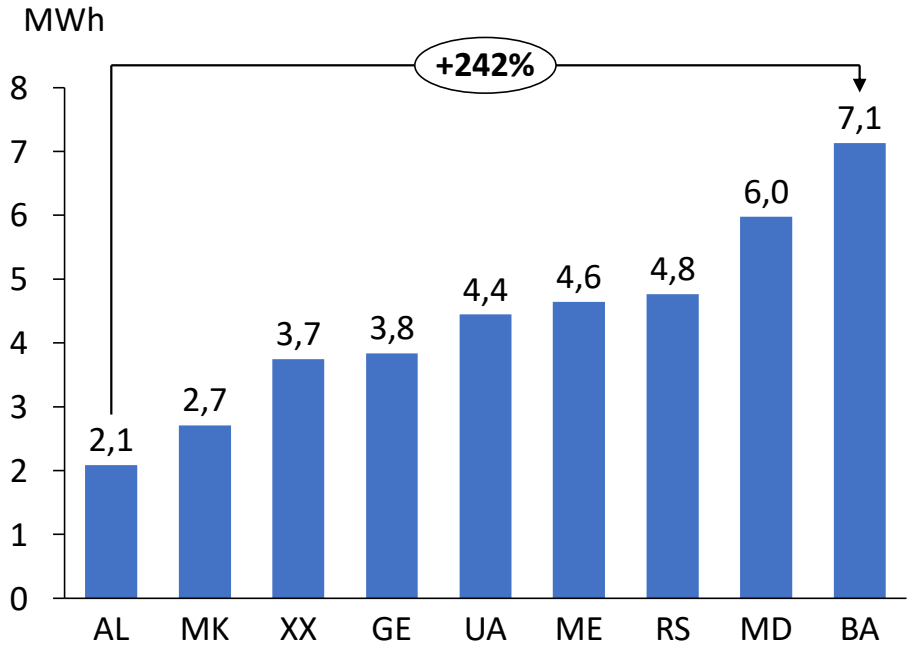


Poverty headcount ratio at USD 1.90 a day (2011 PPP) (% of population)

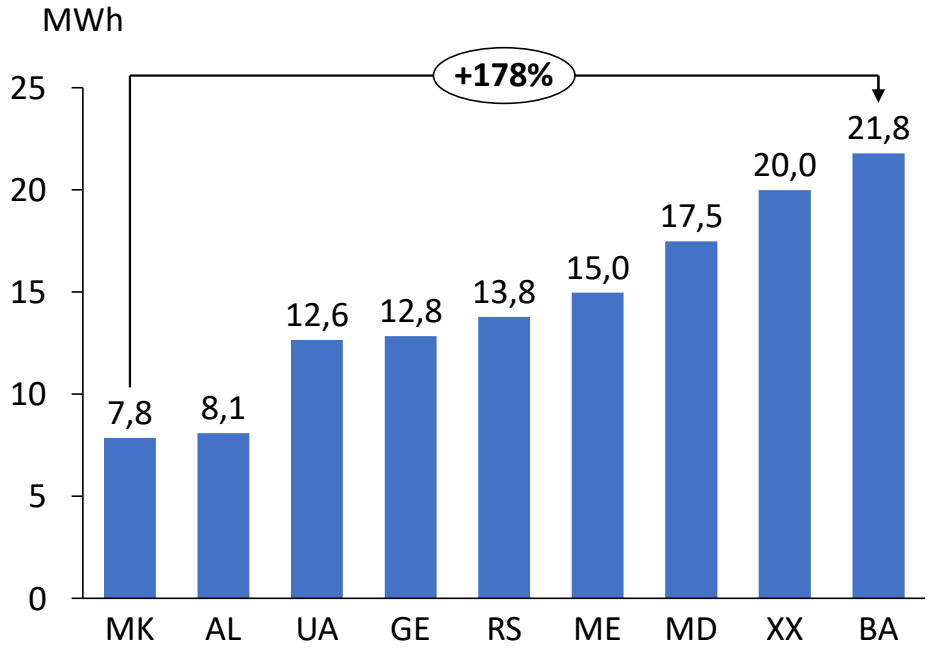


Data availability: Albania - 2017, Bosnia and Herzegovina - 2011, Georgia - 2019, Moldova - 2017, North Macedonia - 2018, Montenegro - 2016, Serbia - 2017, Kosovo* - 2017. There is no available data for Ukraine.

Final energy consumption of households



Total annual energy consumption, MWh per person

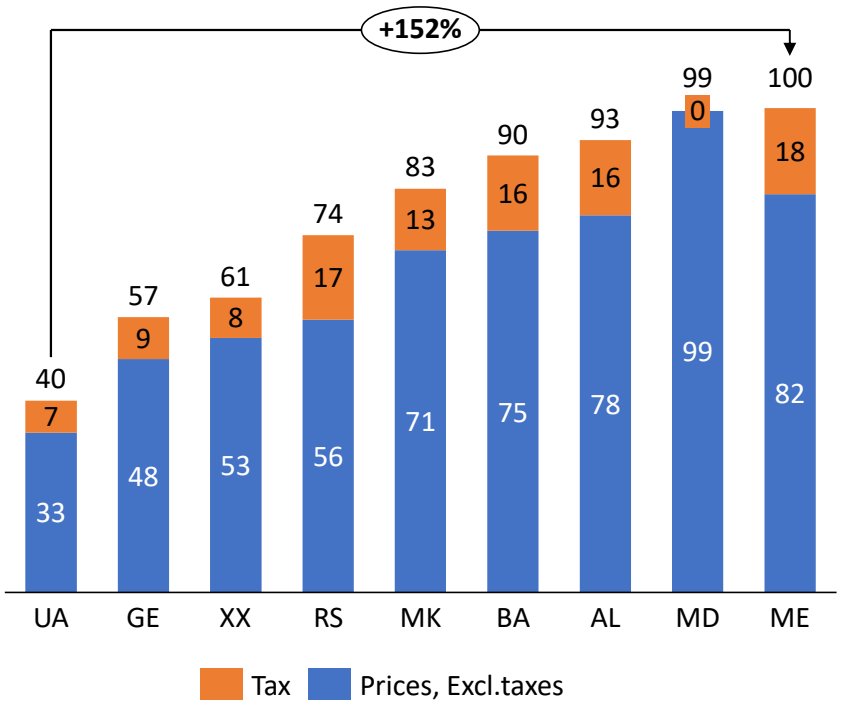


Total annual energy consumption, MWh per household

The availability of different energy sources

Country	Electricity	Gas	DH
Albania	✓	x	x
Bosnia and Herzegovina	✓	✓	✓
Georgia	✓	✓	x
Kosovo*	✓	x	✓
Moldova	✓	✓	✓
Montenegro	✓	x	x
North Macedonia	✓	✓	✓
Serbia	✓	✓	✓
Ukraine	✓	✓	✓

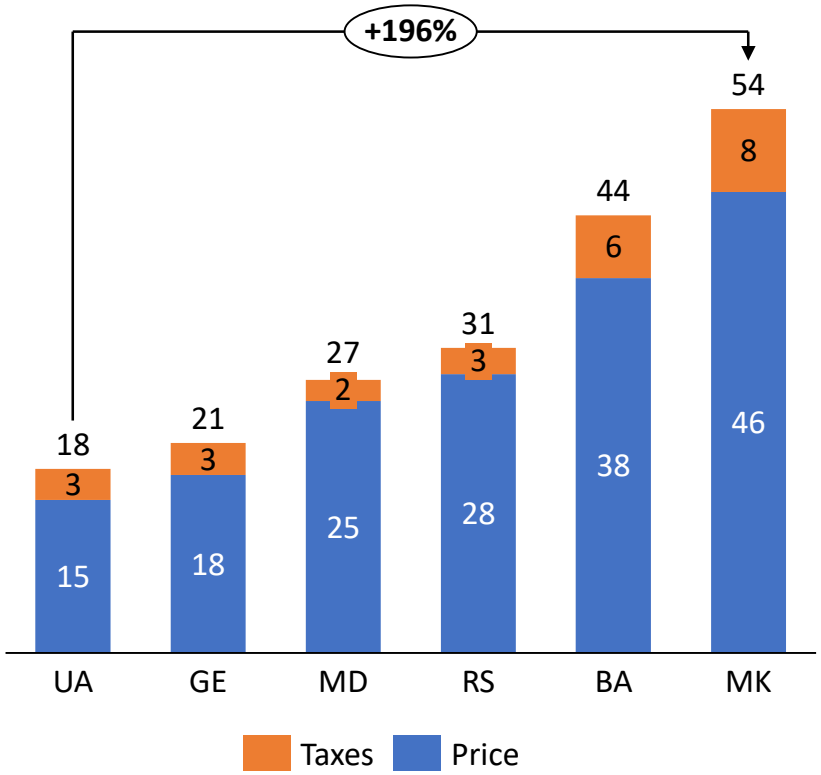
Household energy prices - electricity



Structure of household electricity prices, EUR/MWh

Share of taxes as a proportion of final household electricity prices

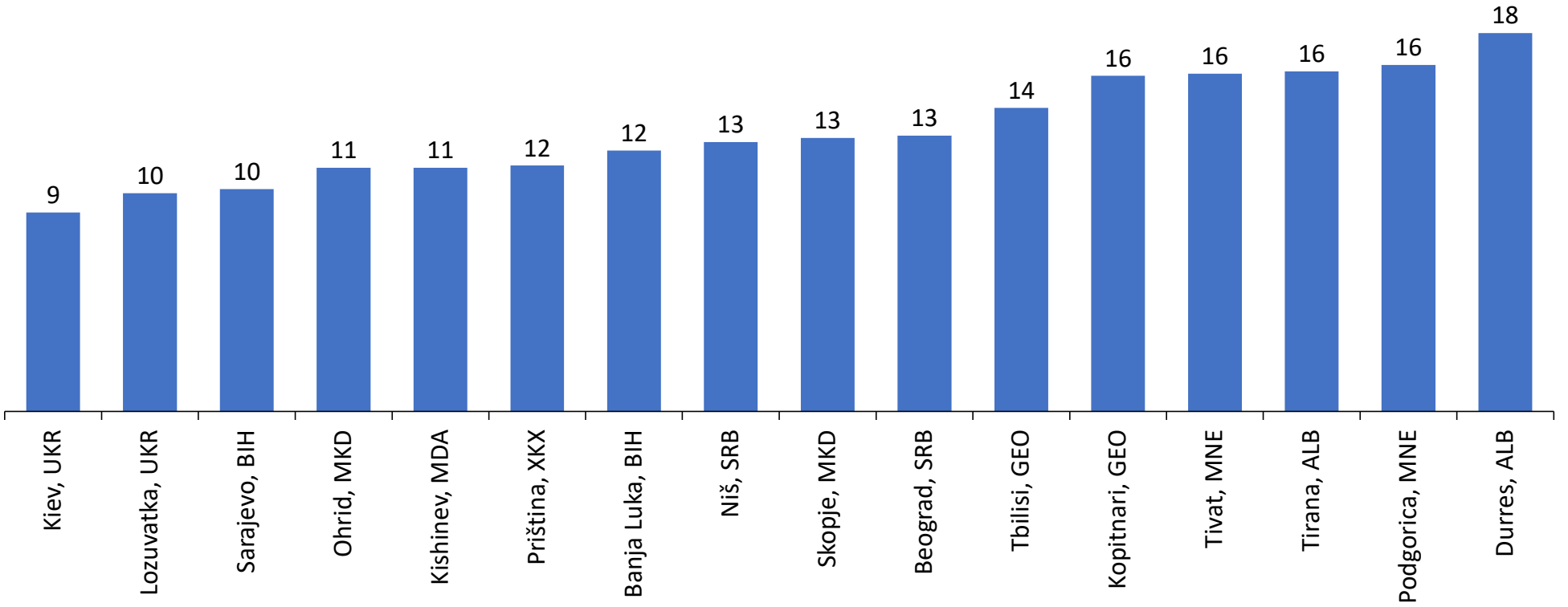
Household energy prices - gas



Structure of household gas prices, EUR/MWh

Share of taxes in percentages in final household gas prices

Climate



Annual average temperatures in °C in selected cities

Housing efficiency

- Most important factor contributing to energy poverty
- Two phenomena:
  - Low energy efficiency of dwellings defined as the average heat energy demand (kWh/m2)
  - Low energy efficiency of heating systems defined as system efficiency (%).
- Analyzing the average heat energy demand in the housing sector for specific CPs shows that energy consumption for heating is 50% to 70% above the energy efficiency standard
- Use of heating systems varies between countries.
  - In rural households, heating by burning solid fuel (wood in mostly individual stoves) with an efficiency of 50%.
  - In ALB, BIH, MNE, XX*, MD, MK and RS, even in urban areas individual stoves fueled with wood dominate.
  - UA and GA individual boilers with efficiency ~ 90% using natural gas (53% share)

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Measuring aggregate energy poverty

- Energy poverty:
  - Private problem: confined to the walls of the household
  - Varies over time as household circumstances change
  - Level of energy services are judged subjectively
- Therefore, four groups of indicators developed
  - Vary in reliability, precision and ease of use
- 1. Using direct readings and comparing to some accepted standard (lighting, heating, cooling)
  - Temperature level (21°C in occupied rooms)
  - Considered impractical, expensive - > only used in small scale (pilot) project

Measuring aggregate energy poverty

- 2. Level of household energy expenditure in relation to pre set absolute or relative levels
  - Energy burden: share of energy costs in total disposable income
  - 2M: households whose share of energy expenditure in equivalized disposable income is more than twice the national median share
  - M/2: households whose absolute energy expenditure is below half the national median (extremely low)
- 3. Indicators measuring the presence of symptoms of energy poverty
  - E.g. moldy walls, condensation, or a leaking roof
- 4. Consensual indicators – asking people subjective questions of the level and quality of energy services
  - E.g. inability to keep households adequately warm

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Selected indicators

Indicator	Definition	Data availability
M/2	Absolute (equivalised) energy expenditure below half the national median	HBS
2M	Proportion of households whose share of energy expenditure in equivalized disposable income is more than twice the national median share.	HBS
Ability to keep home adequately warm (HH050)	Self-reported indicator that measures the affordability of energy by asking households to provide an answer to the interview question: "Can your household afford to keep its home adequately warm?".	EU SILC

Selected indicators

- Advantages
  - Based on publicly available data
  - Data readily available
  - Possible comparison among CPs
- Proposal: indicators should be calculated by statistics offices

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Indicators to be used

- Energy poverty defined as a range as it has different levels
  - Lower bound: share of households that declared themselves as unable to keep their homes adequately warm.
  - Upper bound: share of households that spend twice the national median on energy (2M) and the share of households that spend half the national median on energy (M/2).
  - Indicators calculated for the **first four deciles**.
- Goal: an estimate of the share of households that are affected by energy poverty
- Data sources: HBS and EU SILC

Data availability

CP	HBS		EU SILC	
	Availability	Provided	Availability	Provided
Albania	✓	✗	✓	✗
BIH	✓	✗	✗	✗
Georgia	✓	✓	✗	✗
Kosovo*	✓	✗	✓	✗
Moldova	✓	✗	✗	✗
Montenegro	✓	✓	✓	✓
North Macedonia	✓	✗	✓	✗
Serbia	✓	✓	✓	✓
Ukraine	✓	✓	✗	✗

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Proposal of measures

Short term measures

- Measures aimed at increasing the household's income and protection from disconnections.
  - A. Protection:
    - against disconnection in case of non-payment
  - B. Direct financial support (don't expand)

Long term measures

- Measures aimed at decreasing energy-related expenditures.
  - A. Energy efficiency improvements
  - B. Energy retrofitting of the buildings
  - C. Heating system improvements
  - D. Implementation of low-cost energy efficiency measures including provision of energy counseling:
  - E. Renewable energy sources (RES) support

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Conclusions (1/3)

- All CPs have definitions of vulnerable consumers, and the definition is closely related to the social (income) and health status
  - Other aspects and drivers of energy poverty, such as energy efficiency of homes, gender, and energy needs, are not considered.
  - We proposed all CPs adopt a definition of energy poverty
- All countries (except for North Macedonia) implement only income supporting measures as a main tool to aid vulnerable consumers.
  - Income supporting mechanism can temporarily reduce the burden of energy poverty, but such measures do not remove its main causes.

Conclusions (2/3)

- To determine the number of energy poor households, we proposed using statistical data that is regulatory collected by the national statistics offices
  - We propose using standardized statistical surveys: HBS and EU SILC.
  - To have the relevant energy poverty indicators available for the purpose of policy decision making, the indicators proposed in this study should be calculated by the relevant statistical offices.
- To alleviate the issue of energy poverty, we proposed a set of long term and short-term measures.
  - We propose such measures be included in the national NECP and NEEAPs to ensure their implementation.

Conclusions (3/3)

- Recent energy crisis already caused energy price increases pushing more people in energy poverty
  - Urgent implementation of measuring and monitoring systems
  - Urgent implementation of measures for mitigation
- Upcoming changes to EU ETS are likely to further increase prices of energy for households -> without adequate protection measures more will be pushed into energy poverty
  - New EU ETS foresees inclusion of buildings sector (and road transport) into scheme
    - This will cause increase in all energy produced by non-RES sources (biggest impact expected in gas and fuel-oil powered heating)

Thank you

For any questions and comments, contact us at:
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