



Energy Poverty

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Energy Community Summer
School

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The Institute for European Energy and Climate Policy (IEECP) is a non-for-profit, independent research foundation working, since 2015, on **science-based climate change mitigation, energy efficiency and renewable energy policy.**

History of IEECP

IEECP was established in The Netherlands in 2015.

Today, IEECP experts are based all over Europe enabling local exchange and having tacit knowledge of these geographical areas.

7 years ago, we took Schumacher's seminal "Small is Beautiful: A Study of Economics as if People Mattered" approach and established a small entity to target big issues.

Projects in 2022 and primary focus



Energy poverty

Climate



Energy efficiency



Knowledge exchange



Renewables



Partnerships

We work closely with EU institutions, international organisations, national, regional and local governments, think-tanks, NGOs, academics and the business world **to lead the transition to climate neutrality and to a sustainable energy future for various sectors.**

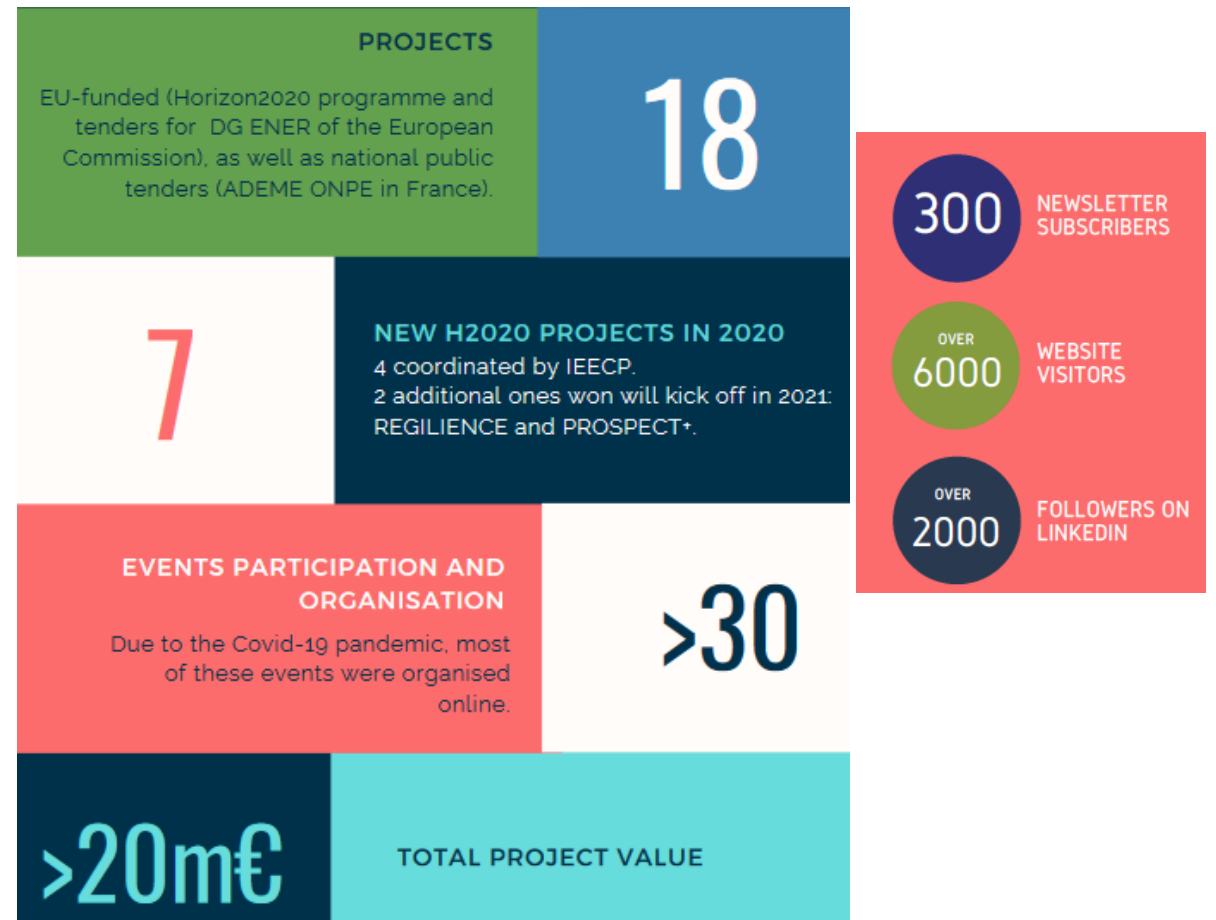
We build valued partnerships with renowned organisations from across Europe as we believe collaboration and creating a community helps carrying our ideas and results further, **to shape, together, a low-emissions, resilient future.**

Some figures

In 2019



In 2020



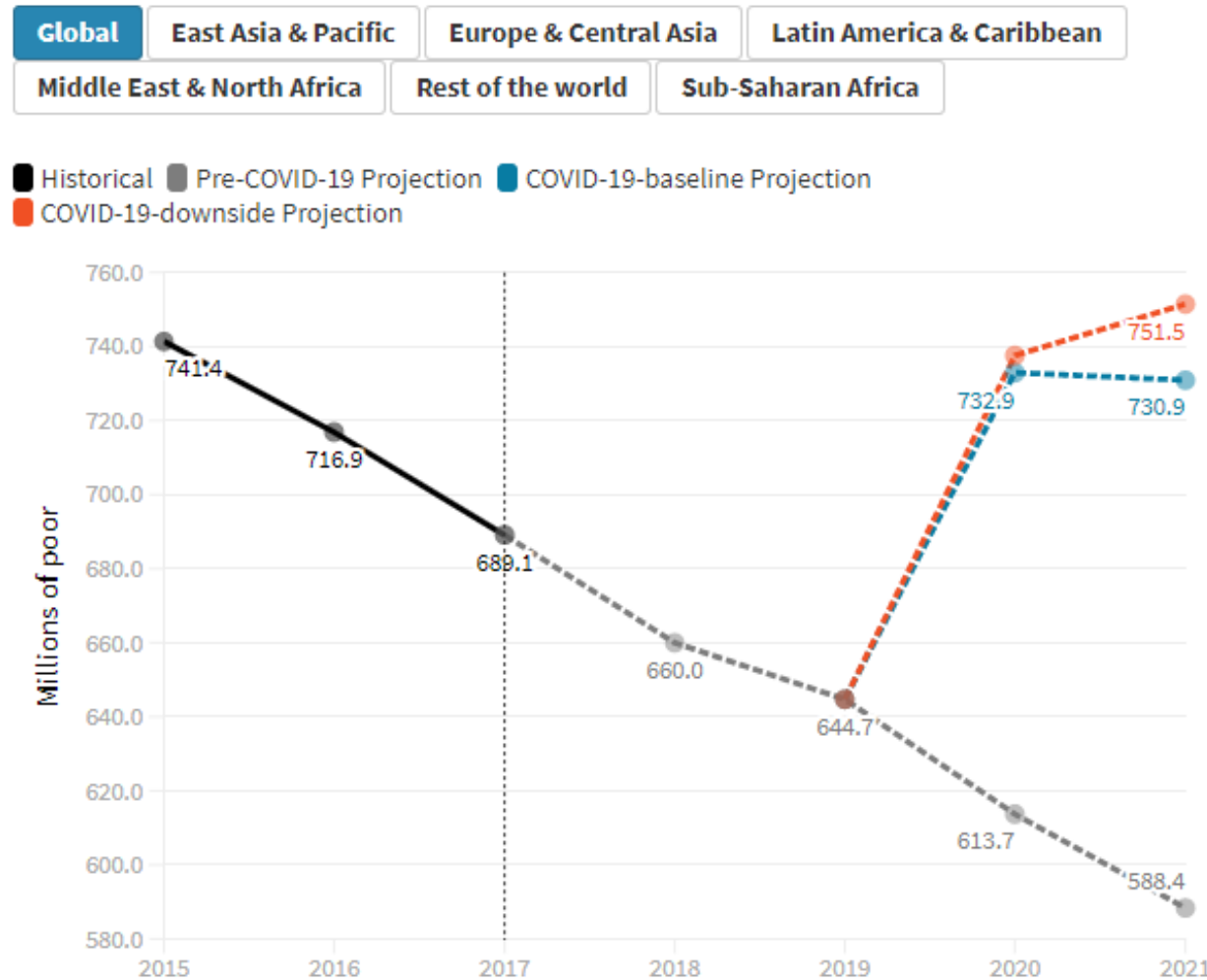
What is energy poverty?

Introduction



**field photos of energy poor households in this presentation are owned by Society for Sustainable Development Design - Croatia*

Poverty



Source: [Lakner et al \(2020\) \(updated\)](#), [PovcalNet](#), [Global Economic Prospects](#).

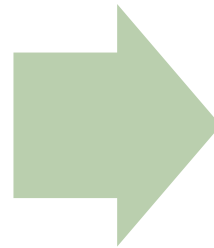
Note: Extreme poverty is measured as the number of people living on less than \$1.90 per day. 2017 is the last year with official global poverty estimates. Regions are categorized using PovcalNet definition.

Definition of energy poverty?

Poverty, the state of one who lacks a usual or socially acceptable amount of money or material possessions.

Poverty is said to exist when people lack the means to satisfy their **basic needs**.

(britannica)



Energy poor households experience **inadequate levels of essential energy services**.

(EPOV)



Even though a single definition of energy poverty does not exist, work commissioned by the EC (Pye et al., 2015) has defined energy poverty as a set of conditions where ***‘individuals or households are not able to adequately heat [cool] or provide other required energy services in their homes at affordable cost’.****

EU comission SCF (suggestion):

“households in the lowest income deciles whose energy costs exceed twice the median ratio between energy costs and disposable income after deduction of housing costs”.

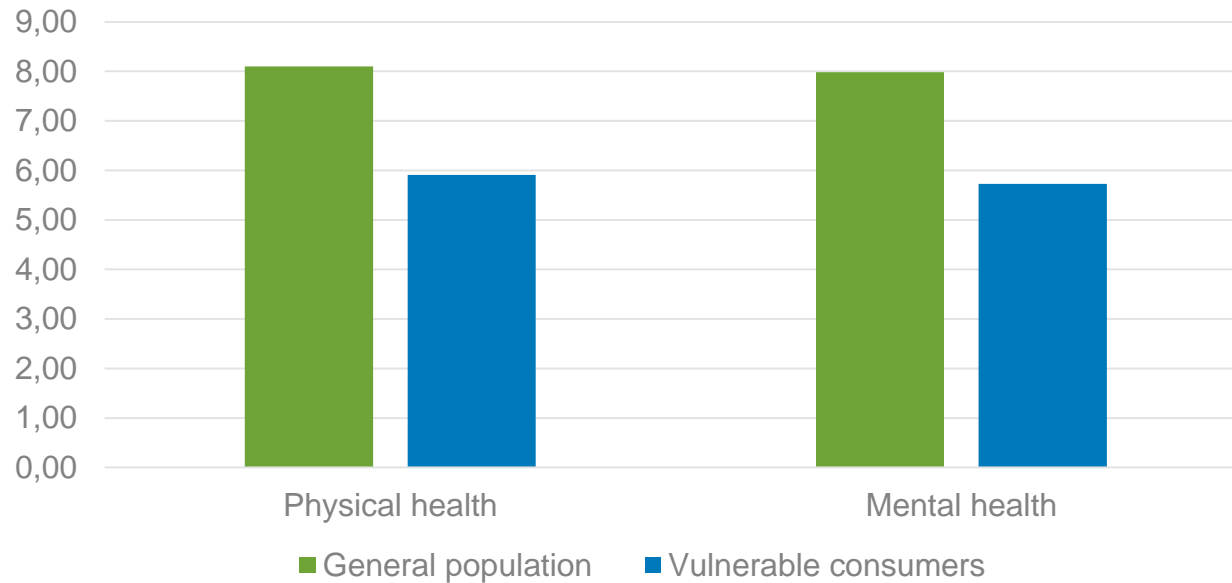


What does „required energy service” mean?



What does „required” mean?

Energy poverty is the inability to heat a home to a socially and materially **needed level** along with impaired physical and mental health and reduced opportunities to participate in community activities*:



**an example from a case study in Croatia by dr.sc. Ančić, dr.sc Domazet and Katarina Grbavac*

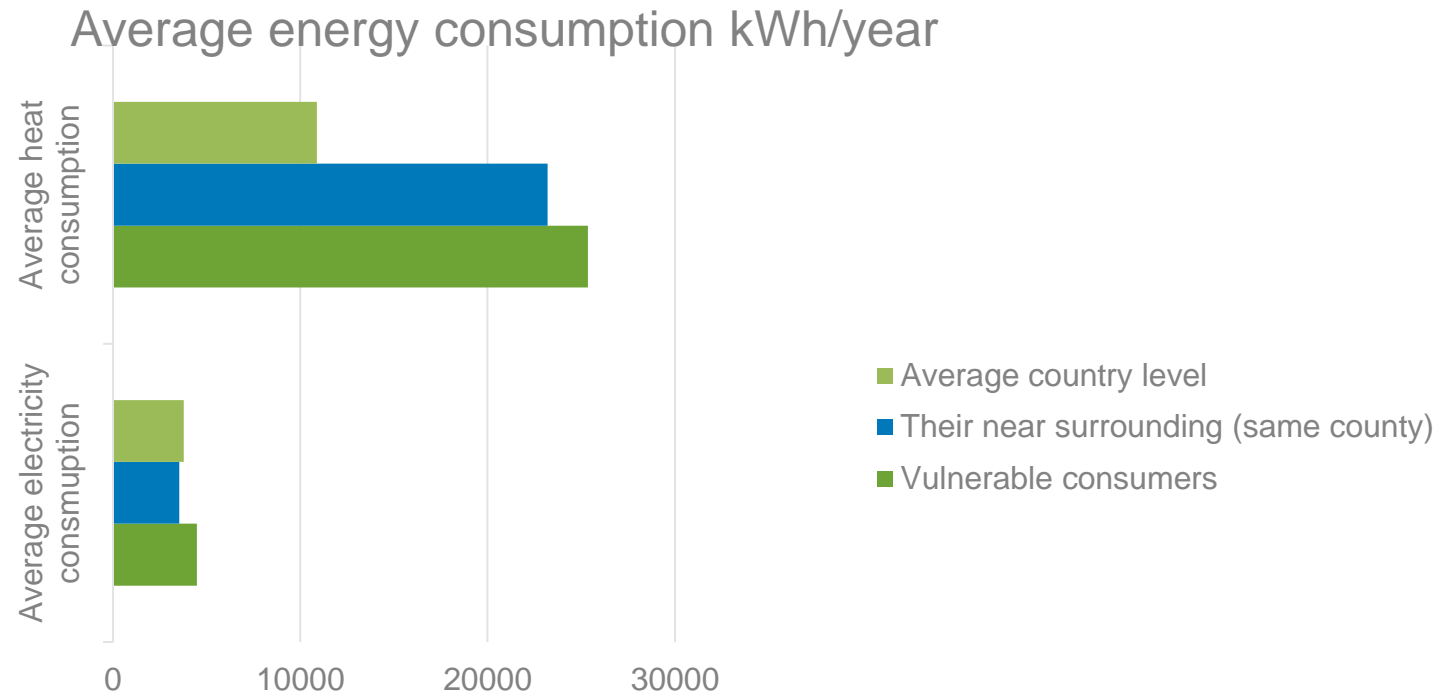
Situational analysis

How to measure what
has not been defined?



The indicators of energy poverty (four primary)*

1. High share of energy expenditure in income (2M) – part of population with share of energy expenditure in income >2x the national median.
2. Low energy expenditure (M/2) – part of population whose absolute energy expenditure is <1/2 the national median.

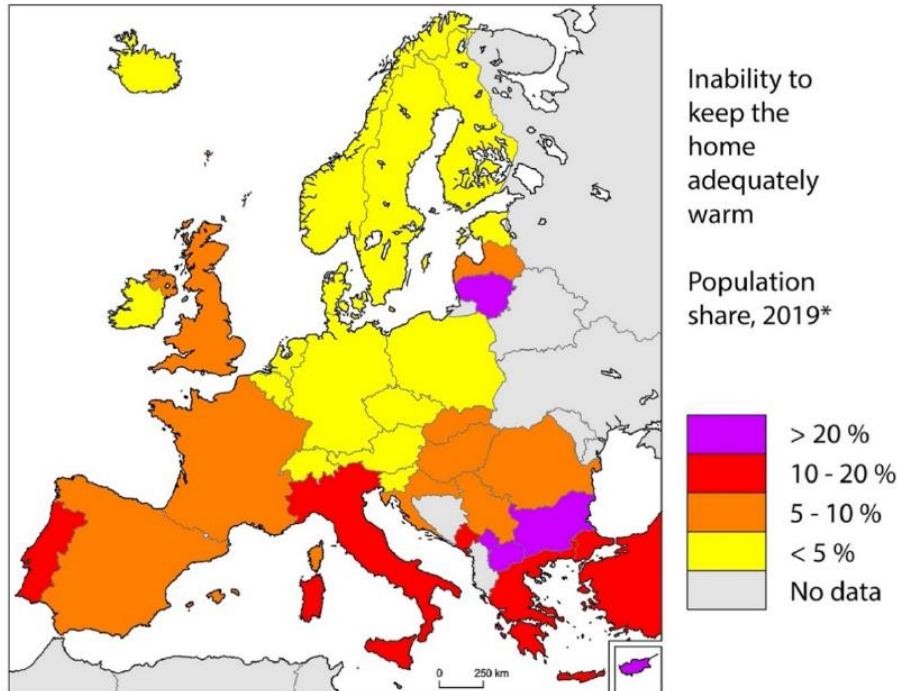


Bouzarovski S, Thomson H, Cornelis M, Varo A and Guyet R, : Towards an inclusive energy transition in the European Union: Confronting energy poverty amidst a global crisis, Publications Office of the European Union

*<https://www.energypoverty.eu/indicators-dana>

**REACH project – Croatia

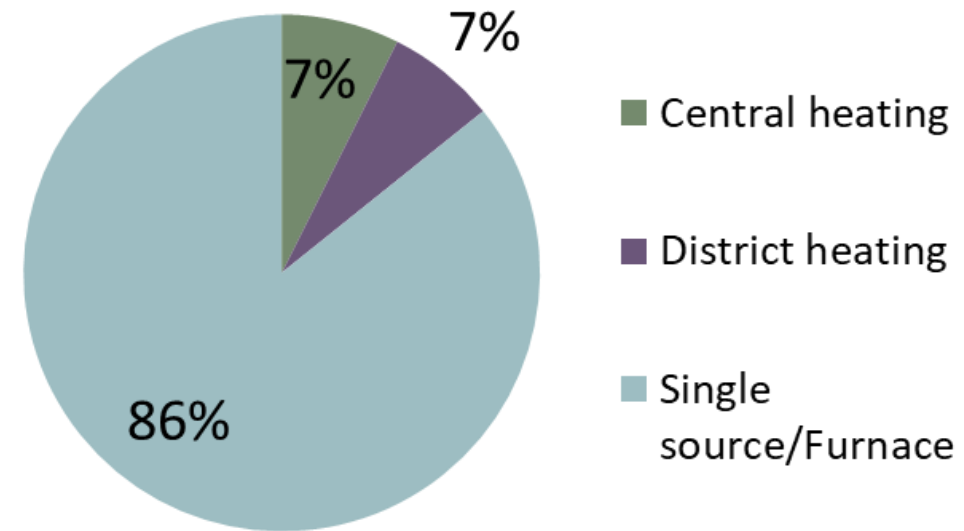
3. Inability to keep home adequately warm (Keep warm) – based on self-reported thermal discomfort. Source: EU-SILC203



* Kosovo*, UK, and Iceland data from 2018.

Figure 4-1. The energy poverty divide in Europe (Source: [16])

Heating System



* EIHP&DOOR

*graph is from „From knowledge to warm home” project - Croatia

4. Arrears on utility bills (Arrears) – based on households' self-reported inability to pay utility bills on time in the last 12 months. Source: EU-SILC

Example*:

At the level of user households, average monthly consumption for utility expenses (electricity, gas, telephone, heating, water, utilities, etc.), is about 760 kunas.

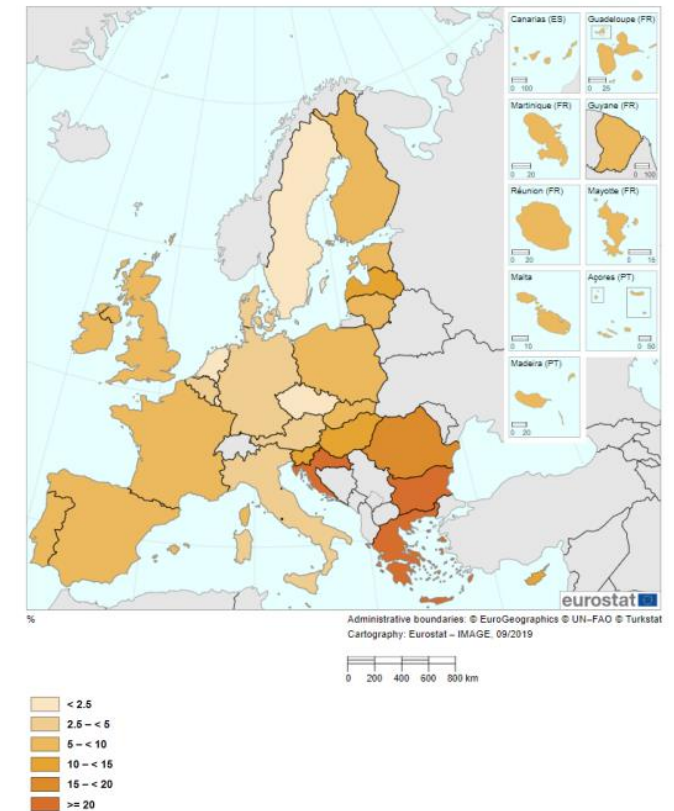
Up to 66% of beneficiary households spend up to 20% of their total income on utilities. The reason for this can be found in the fact that all households heat with wood and all beneficiaries of financial support for the purchase of wood for firewood.

In addition, about 24% of users procure wood and felling in their own forest.

ANYHOW - 80% of respondents say they have difficulty paying their heating bills.

**an example from a case study in Croatia by dr.sc. Ančić, dr.sc Domazet and Katarina Grbavac*

Figure 2: Map of 'Arrears on utility bills'. Data source: ilc_mdcs07, EU-SILC 2017



SECONDARY INDICATORS gathered by EPOV

- **Fuel oil prices, Biomass prices, Coal prices, Household electricity prices, District heating prices, Household gas prices**
- **Energy expenses**, Consumption expenditure for electricity, gas and other fuels as a share of income for income quintile 1, 2, 3, 4, 5
- **Dwelling comfortably cool during summertime** Share of population, based on question “Is the cooling system efficient enough to keep the dwelling cool?” and/or “Is the dwelling sufficiently insulated against the warm?” **Dwelling comfortably warm during winter time**
- **Equipped with air conditioning/heating** Share of population living in a dwelling equipped
- **Number of rooms per person, owners/ renters** Average number of rooms per person in owned dwellings
- **Dwellings in densely populated/ intermediately areas** Share of dwellings located in densely populated areas (at least 500 inhabitants/km²)
- **Dwellings with energy label** Share of dwellings with an energy label A
- **Poverty risk** People at risk of poverty or social exclusion (% of population)
- **Excess winter mortality/deaths** Share of excess winter mortality/deaths
- **Presence of leak, damp, rot** Share of population with leak, damp or rot in their dwellings



Legislative framework and policies

European Union

Legislative framework in the EU*:



- (Market Design Directive) MS should define the concept of vulnerable consumers. If there is a significant number of vulnerable consumers, measures should be proposed.
- (Electricity Directive) Define a set of criteria to measure energy poverty; Monitor energy poverty; Report on the evolution of energy poverty and measures taken to prevent it to the Commission every two years (as part of their Integrated National Energy and Climate Progress Reports); MS to ensure that customers are given information on alternatives to disconnection.
- (Energy Performance in Buildings Directive) Long term renovation strategies required to contribute to the alleviation of energy poverty.
- (Energy Efficiency Directive) EE obligation scheme: MS shall include requirements with a social aim (...) by requiring a share of EE measures to be implemented as a priority in energy poor households and in social housing; alternative EE policy measures: MS shall take into account the effect on households affected by energy poverty.

(Governance of the Energy Union Regulation)

Integrated reporting on the internal energy market includes national objectives with regards to energy poverty, including the number of households in energy poverty and when the objectives shall be met; also policies and measures to achieve the objectives specific actions, share of savings to be achieved in households affected by energy poverty and in social housing in line with point (a) of Article 7a (5); EEO alternative measures: specific policy measures or individual actions targeting energy poverty



Energy poverty in NECPs*

This report has evaluated whether NECPs target the points:

1. Whether energy poverty is recognised as a distinct phenomenon in the document;
2. Whether energy poverty is explicitly defined;
3. If explicit energy poverty indicator(s) have been formulated;
4. There are direct policies to address energy poverty;
5. There are energy poverty measures involving direct tariff or bill support;
6. There are energy poverty measures involving energy efficiency investment;
7. There are energy poverty measures involving market regulation;
8. There are energy poverty measures involving infrastructure investment;
9. New financing models to address energy poverty have been proposed;
10. EU funding has been recognised as source for energy poverty alleviation;
11. There are effective national best practices to address energy poverty;
12. There are effective local or regional best practices to address energy poverty;
13. There are effective engagement mechanisms to address energy poverty



Interesting facts:

- Denmark, Estonia, Finland, Malta and the Netherlands do not distinguish energy poverty from poverty in general
- Sweden has assessed that the phenomenon should not be covered in the NECP and has not provided an assessment of the situation (as visible from NECP analysis)
- Italy, Austria, Spain and Cyprus have energy poverty definitions, but many use indicators, mostly EU SILC
- A lot of countries are relying on EU funding for resolving the issue
- All mention LTRS will or do include EP

Energy poverty in Energy Community countries



Specificities of the region*

Specific building stock

- Significant amount of energy inefficient construction
- Low-level of thermal insulation of building envelope
- High prevalence of furnace/stove heating

Cultural and social inheritance

- Indoor temperatures
- Cheap energy
- No possibility to regulate or monitor consumption

Distinct path of energy sector restructuring

- Sometimes inadequate institutional capacity
- Overall low level of economic development
- Not liberalised markets
- Regulated energy prices
- Problems of non-payment
- In some areas low efficiency levels of the whole energy chain- from production to consumption



*from: Robić, Rogulj, Ančić: *Energy poverty in Balkans – adjusting policy response to socio-economic drivers*

Legislative framework

Outline of Social Strategy in the Energy Community provides definitions of electricity and gas vulnerable consumers:

- Uses energy for supplying their permanent housing.
- Does not exceeding maximum energy consumption on a per person basis (200 kWh/month/4members)
- Belongs to the category of citizens with the lowest income
- Receives electricity through a single-phase meter with the connection not exceeding maximum power (16A)

If uses gas:

- Does not exceed maximum gas consumption on a per person basis (70cm³/4persons household)

Most EC countries partially follow the definition in their legislative framework.

The conclusion from the authors* are that most countries lack addressing broader vulnerable group.

**study by EIHP&DOOR for EC*

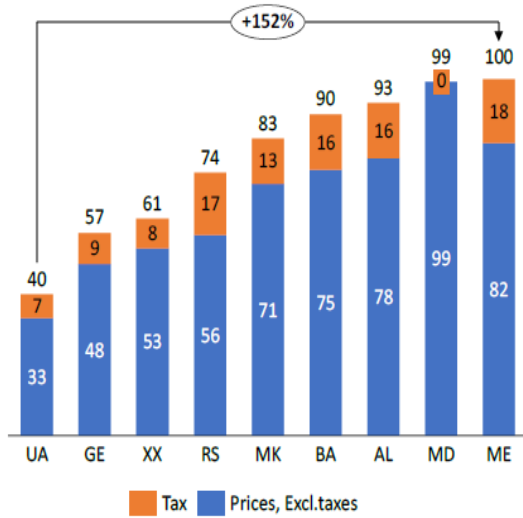


Figure 5-8. Structure of household electricity prices, EUR/MWh

Source: EUROSTAT

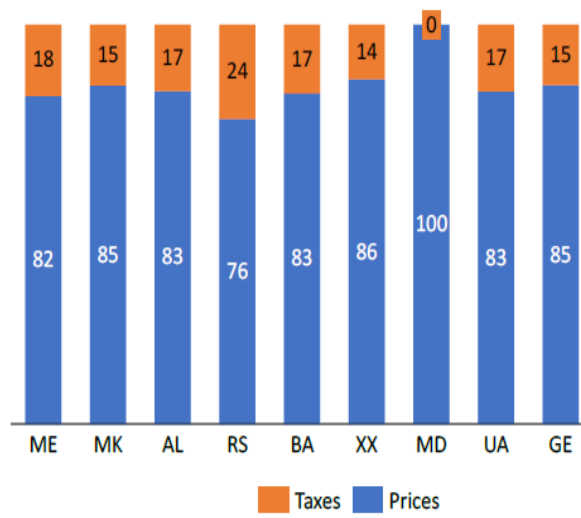
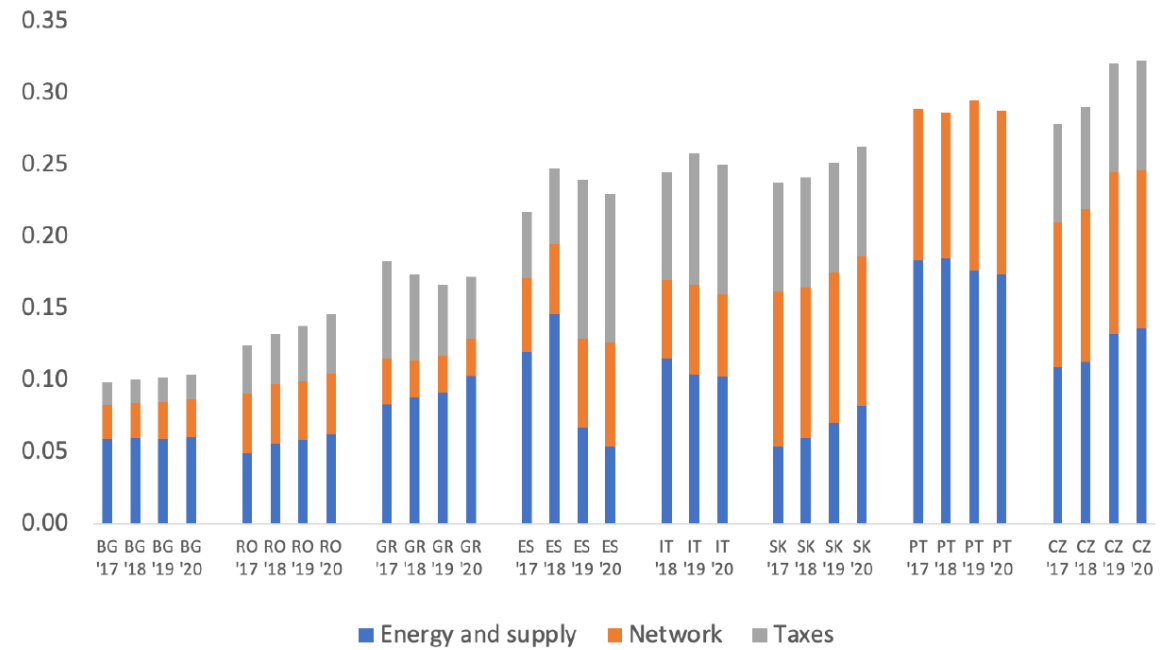


Figure 5-9. Share of taxes as a proportion of final household electricity prices

Source: EUROSTAT

Comparison of price structure in EC compared to EU countries:



Comparison of one of the indicators (RS, NM, EU):

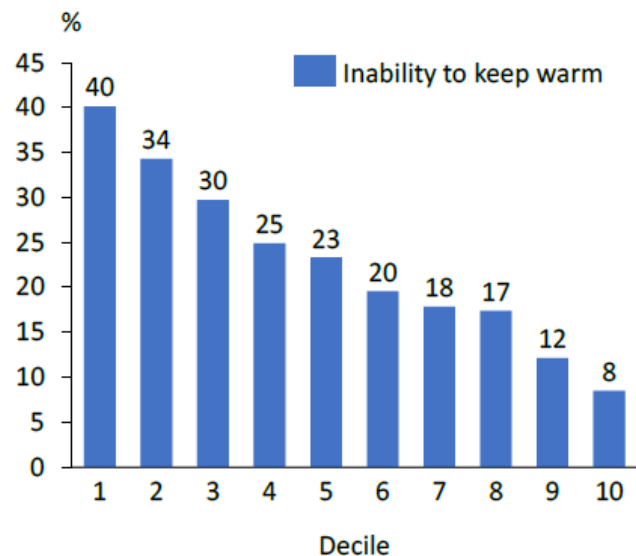


Figure 7-84. Relative share of households unable to keep their dwellings warm

Source: SLCH, 2019

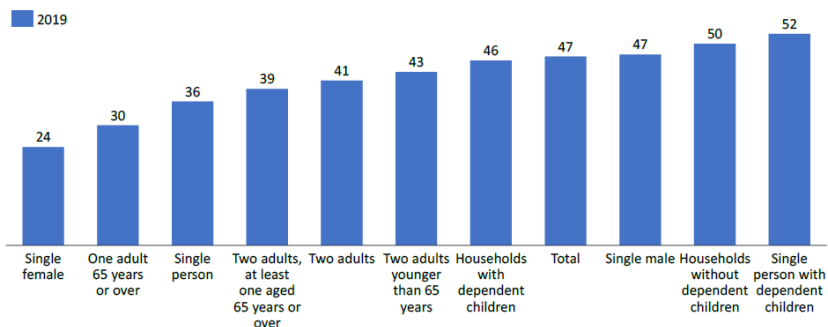
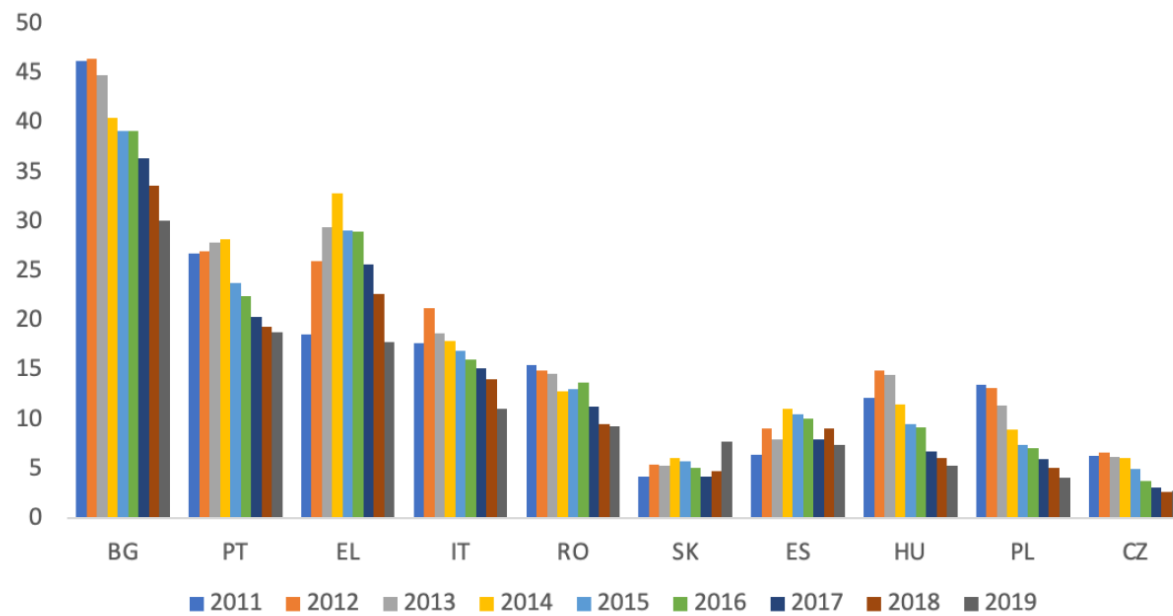


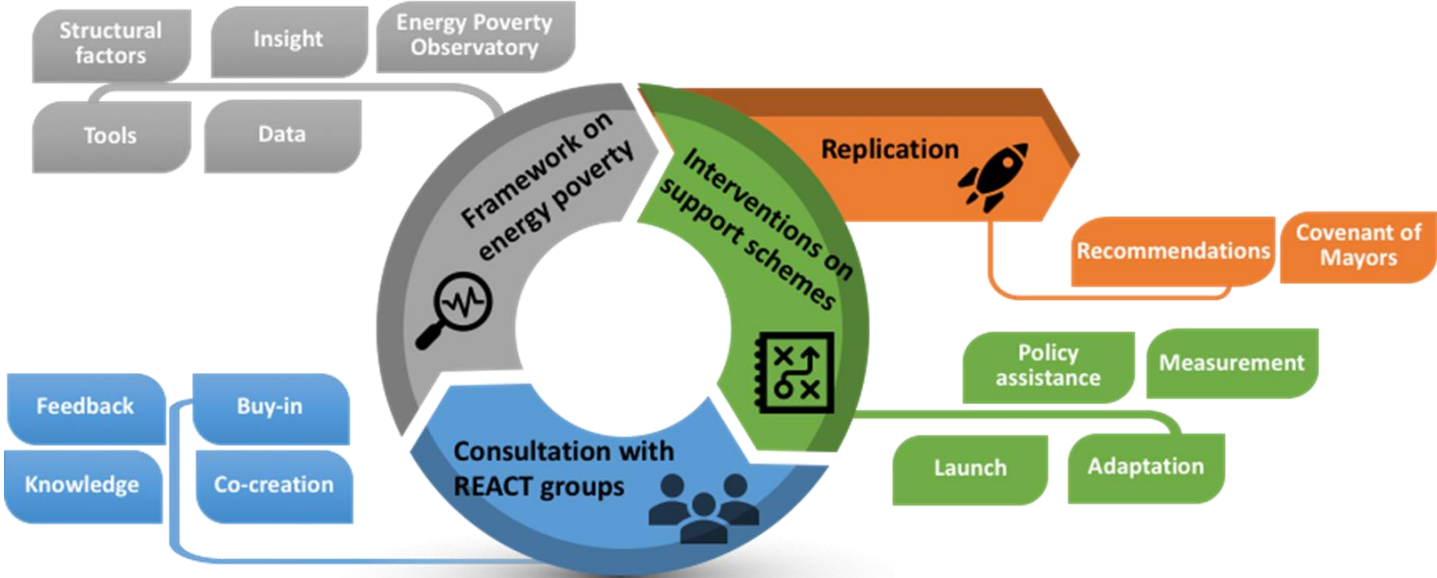
Figure 7-50. Share of households below 60% of the median equivalized income in North Macedonia unable to keep homes adequately warm in 2019¹⁶⁶

Source: EUROSTAT

Figure 15. Share of population reporting an inability to keep the home adequately warm. Source: Eurostat.



Insights into ENPOR project



1. Deepen understanding on energy poverty policies for the private rented sector
2. Monitor dimensions of energy poverty in the private rented sector
3. Support the set-up and implementation of energy efficiency policies to alleviate energy poverty in the private rented sector



Examine in depth energy poverty policies for the PRS across the EU (creating policy fiches and elaborate policy suggestions with politicians)



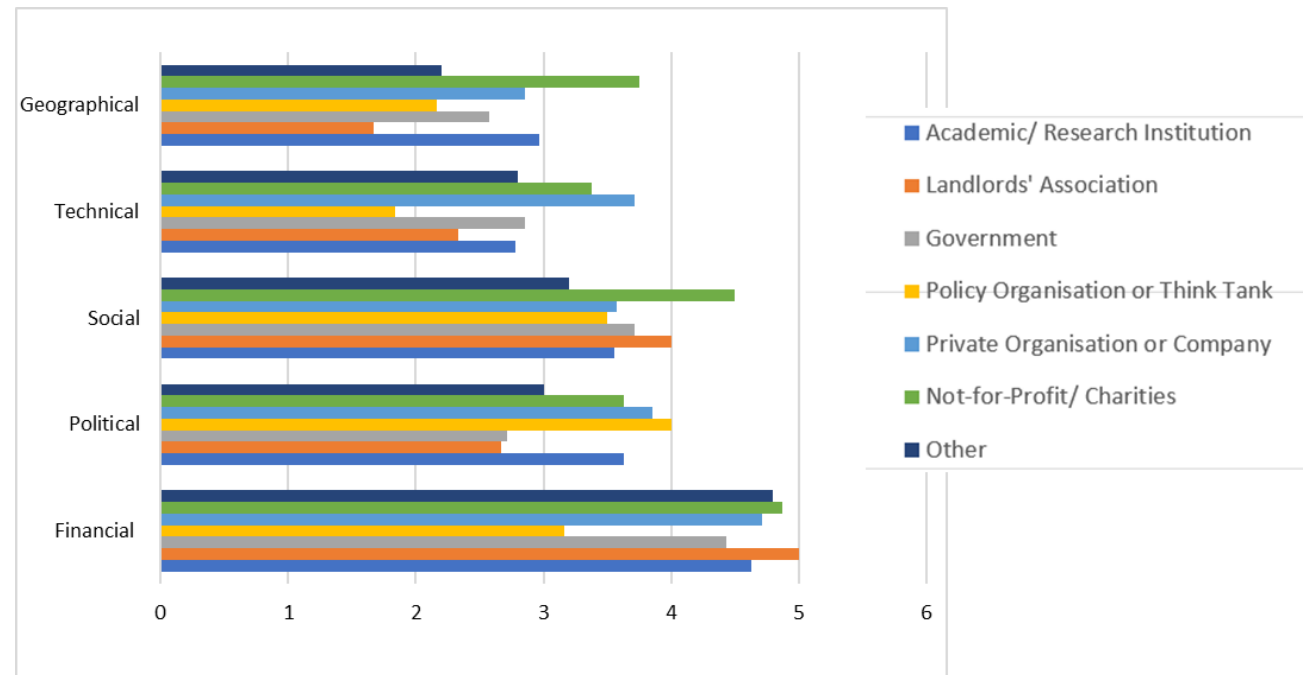
Monitor the dimensions of energy poverty in the PRS (create an Energy Poverty Dashboard: online tool mapping energy poverty in Europe)



Support the adaptation and implementation of ten policies in 7 Member States tailored to the specific needs of the PRS and will integrate them into broader policy objectives

Our Findings

- Financial barriers seen as most important
- Policy awareness (or the lack thereof) didn't play as much of a significant role
- National policies seen as most effective level of governance



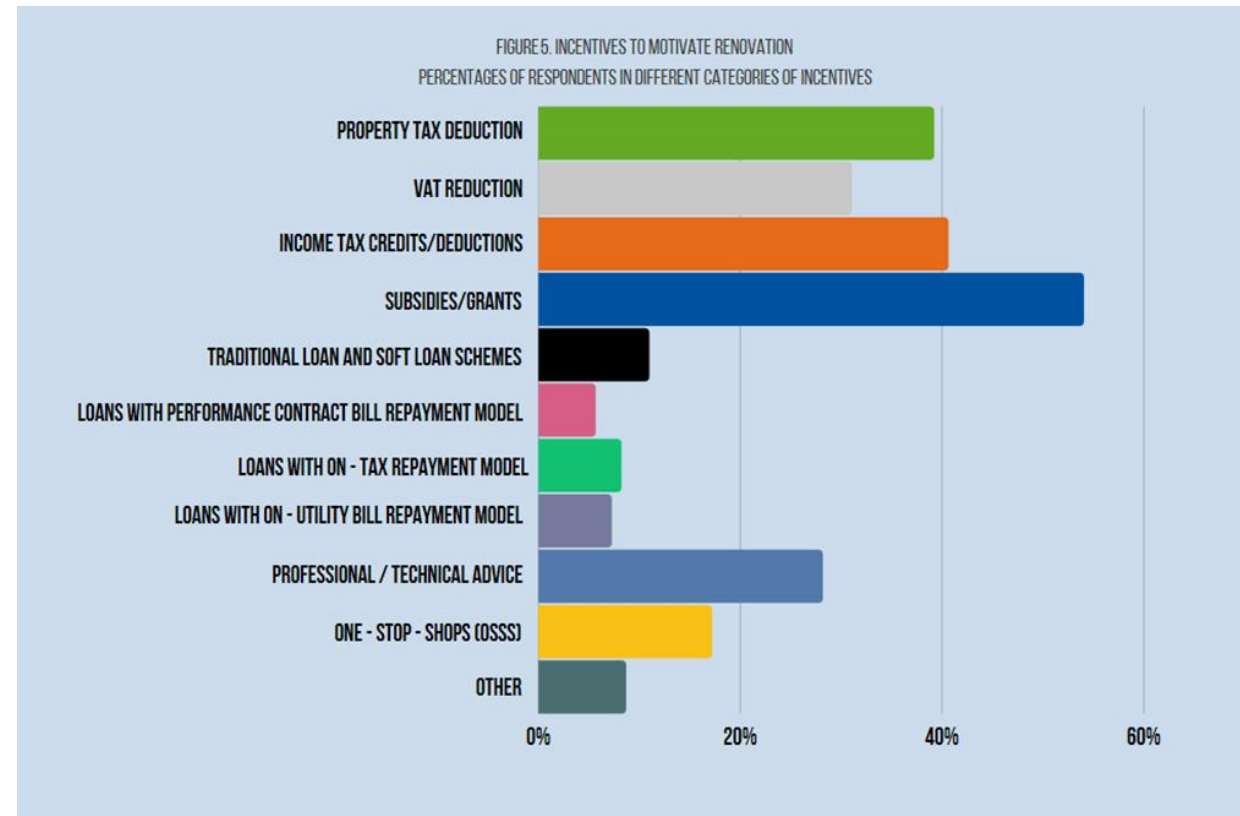
Financial solutions

Most valuable incentives to motivate renovation:

- subsidies and grants;
- income tax credit and deductions;
- property tax;
- VAT deductions.

Political and Regulatory solutions

- Creation and operation of observatories
- Support of the dialogue between involved parties
- Energy performance assessments of buildings through Energy Performance Certificates & MEPS



What's next?



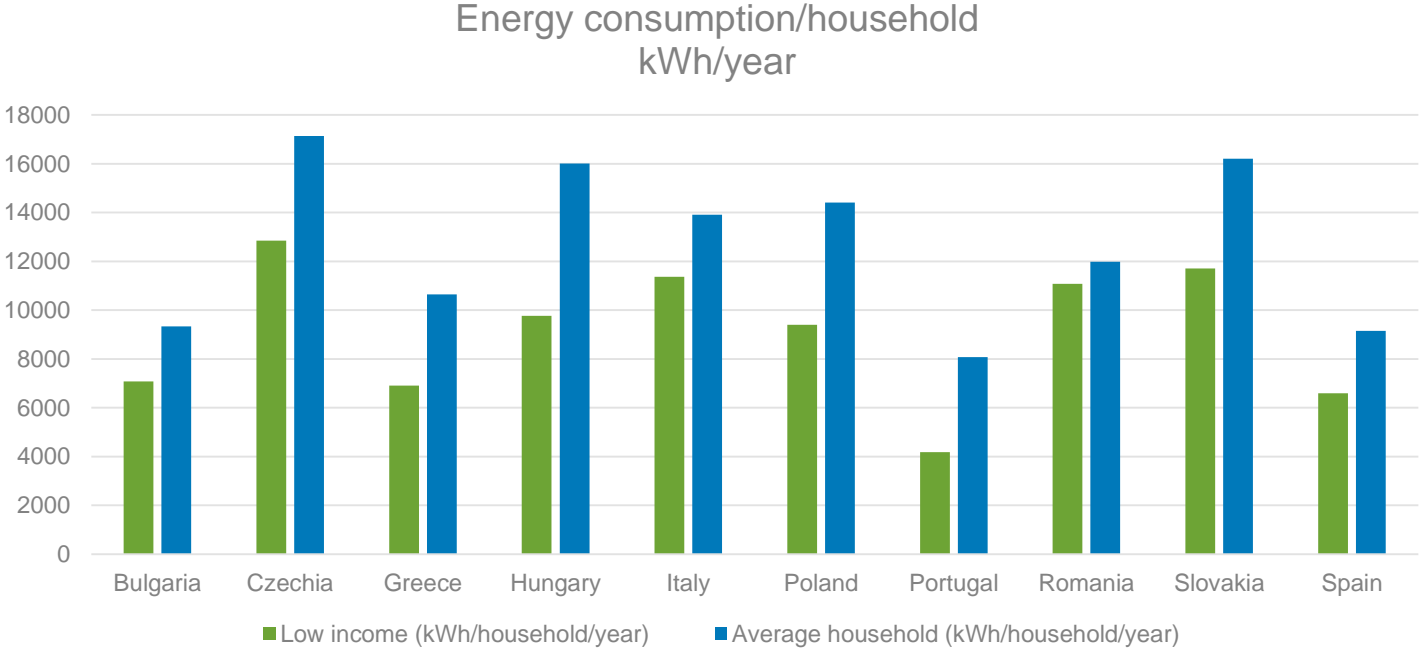
Fit for 55 package

- Strengthens eight mentioned pieces of legislation and presents five new;
- The European Commission plans to set up a **new Social Climate Fund** that will provide dedicated funding to **Member States to support European citizens most affected or at risk of energy poverty**;
- The Social Climate Fund will provide €72.2 billion in current prices for the period with national contributions of at least to 50 percent for the costs for those most exposed to fossil fuel price increases;

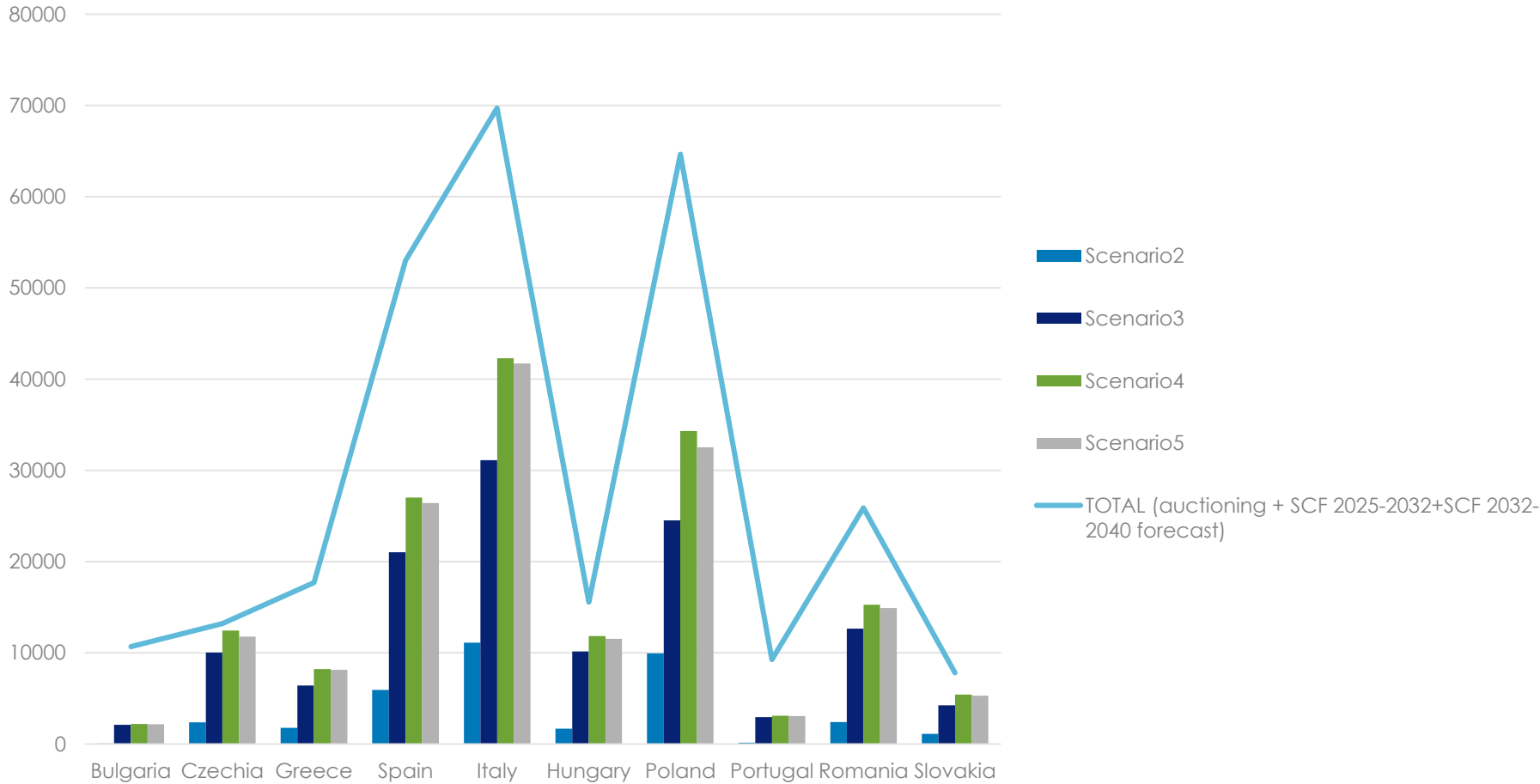
BUT impacts and adverse effects of for example:

ETS extension & Fossil boilers ban?

Peek into the recent study:



Investmant costs vs possible SCF+auctioning revenues



Interesting projects to follow:

Energy poverty in rented apartments

<https://www.enpor.eu/>



Energy poverty and Article 7 EED

<https://www.socialwatt.eu/en>



Energy poverty, urban planning and public health

<https://wellbased.eu/>



Energy poverty and gender issues/ MED climate and summer energy poverty

<https://www.empowermed.eu/>





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Thank you!