

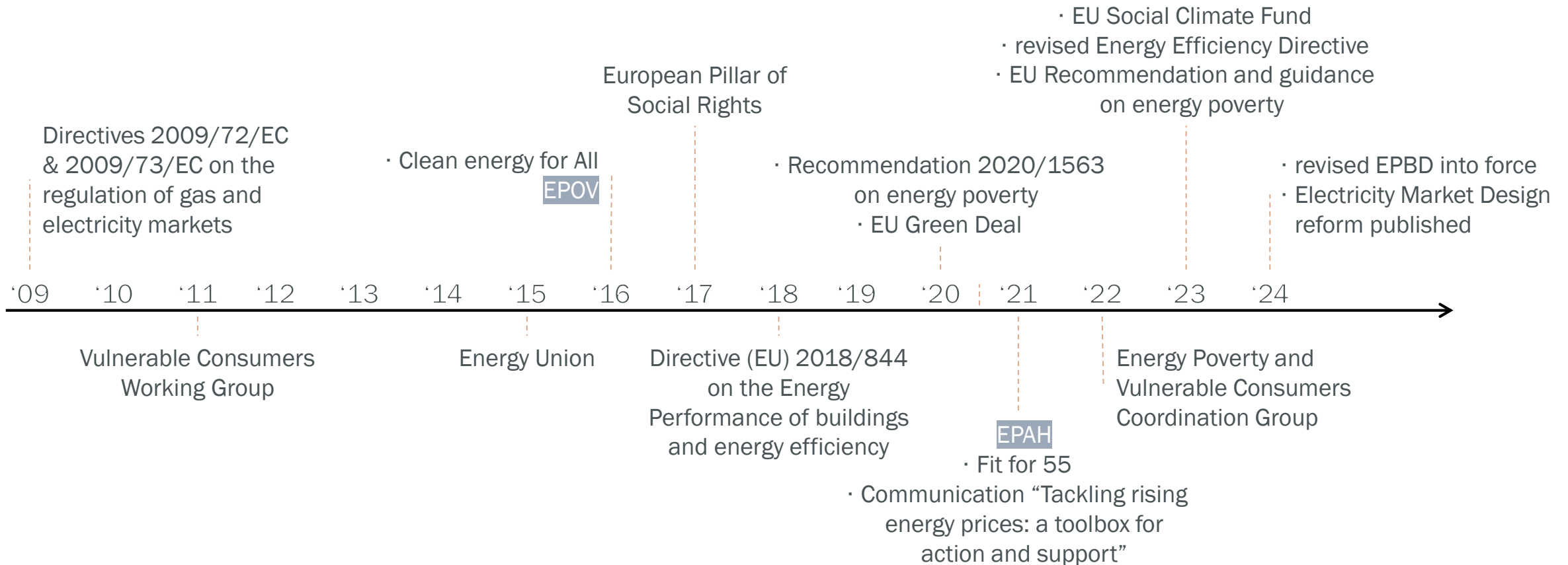


Energy poverty in Europe and a microdata case study of Cyprus

IOANNA KYPRIANOU | CYPRUS INSTITUTE

ODYSSEE-MURE, 16 DECEMBER 2024

Energy poverty in Europe



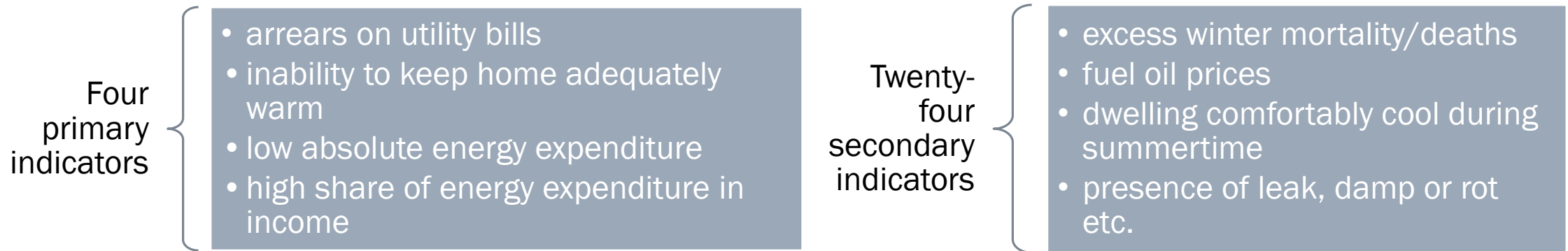
Energy poverty in Europe

EPOV

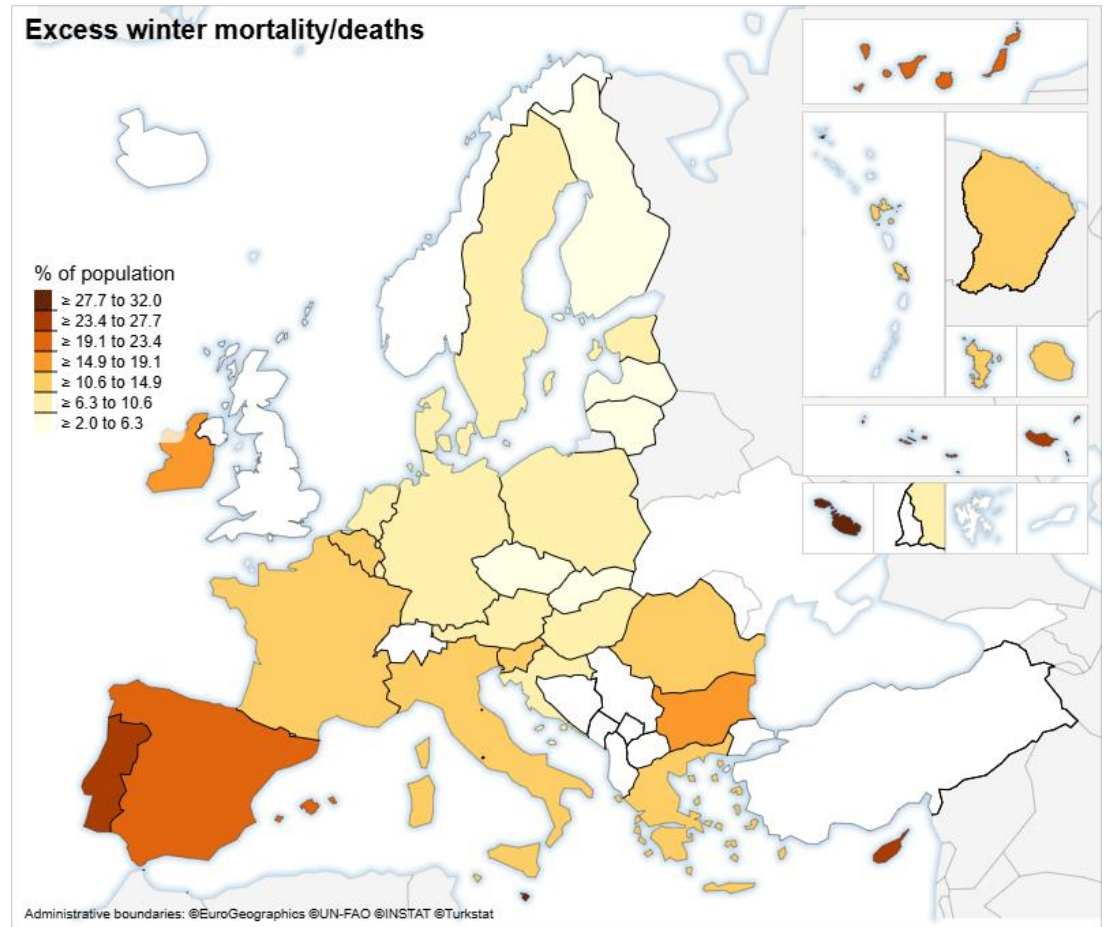
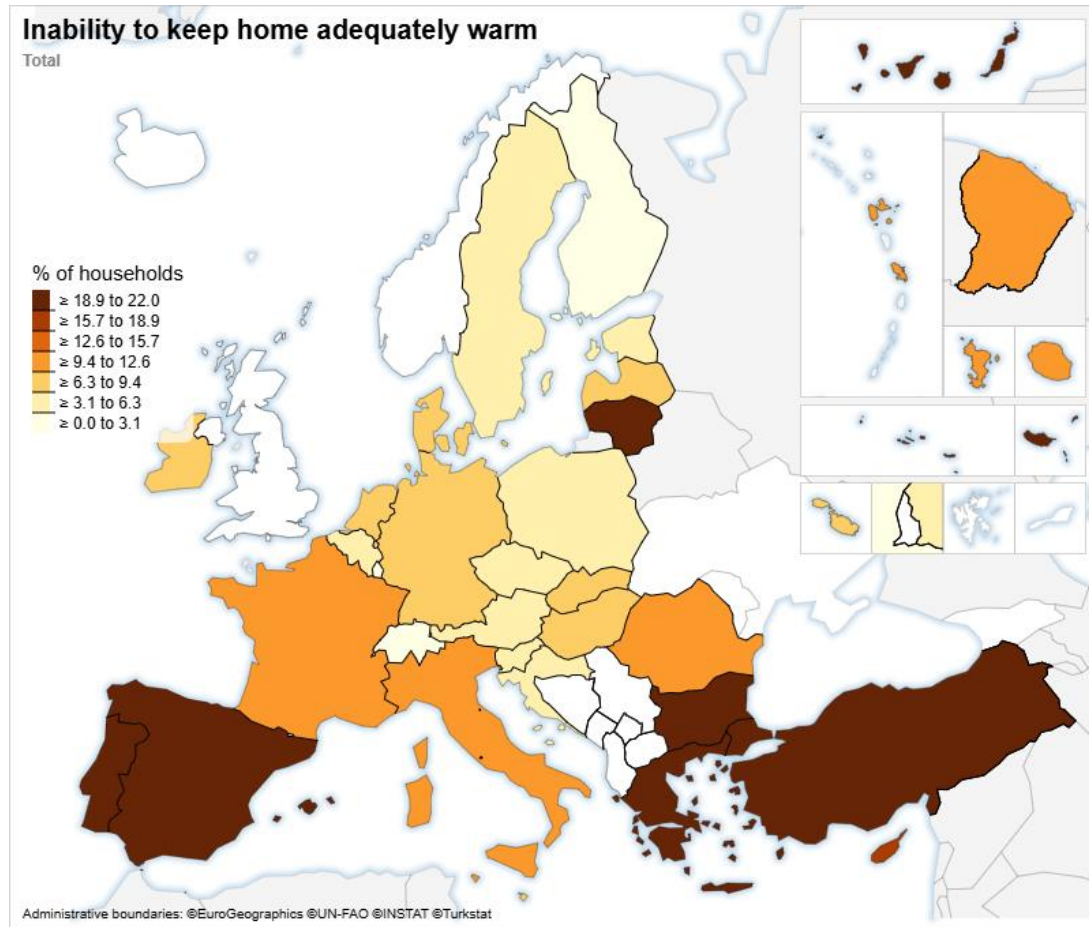
European Energy Poverty Observatory

Energy poverty in Europe -EPOV

Objective: to provide a user-friendly and open-access **resource** that can promote public engagement on the issue of energy poverty, disseminate information and good practice, facilitate **knowledge sharing** among stakeholders, as well as support informed decision making at local, national and EU level.



Energy poverty in Europe -EPOV



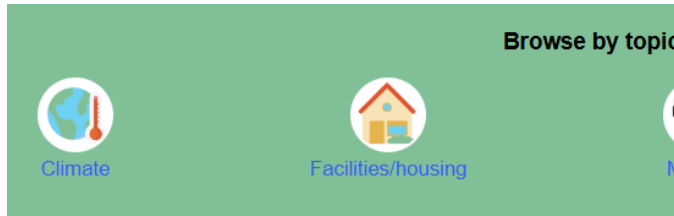
Energy poverty in Europe

EPAH

Energy Poverty Advisory Hub

Energy poverty in Europe - EPAH

Objective: to provide a comprehensive and easy-to-follow guide designed to assist local governments and their stakeholders in developing **local actions** to combat energy poverty.



Digital academy

Energy poverty is a growing challenge and civil society not only needs to acknowledge the challenge but also take concrete and effective actions to address it. However, due to the complexity of the phenomena, front-line actors often face a lack of the required experience and capacity to tackle it.

Courses - Free and open to all →



Local and regional governments are in an ideal position to take action against energy poverty (they have a direct dialogue with the citizens and are super-parties with respect to the energy market). EPAH supports local governments, to play an active and significant role in addressing energy poverty by **providing learning opportunities to increase knowledge and build capacity on energy poverty**.

EPAH has released two courses and is currently releasing progressively its final course **"Alleviating energy poverty: How to implement local actions"**. The extended course addresses civil servants, technical staff, and practitioners with the aim of increasing knowledge and capacity on practical aspects of energy poverty

mitigation and push local actions.

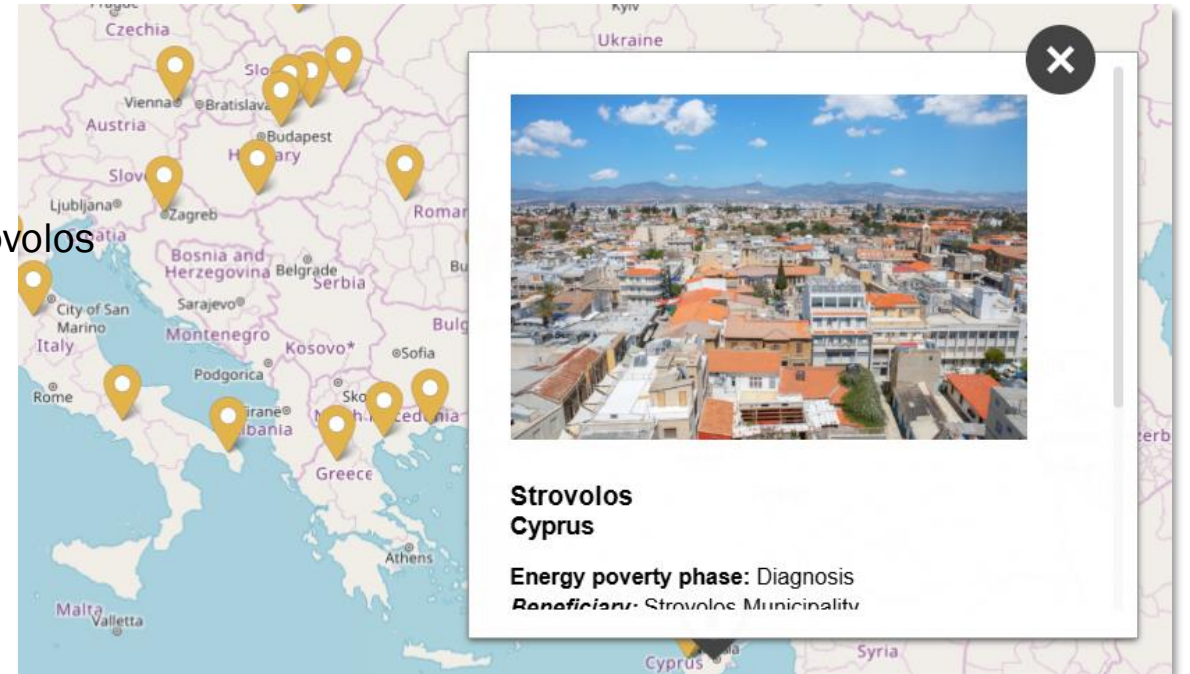


Energy poverty in Strovolos - EPAH

September 2023

- ✓ Data collection & Gaps
- ✓ Indicators - energy poverty diagnosis
- ✓ Energy vulnerable consumers in Strovolos
- ✓ Diagnosis strategy report
- ✓ SDGs – energy poverty
- ✓ Energy vulnerability survey
- ✓ Dissemination event
- ✓ Energy Communities article

May 2024



Energy poverty in Strovolos - EPAH

- ✓ Energy vulnerable consumers in Strovolos
- ✓ Indicators - energy poverty diagnosis

No	No	Indicator	
1	1	Do you live in a building over 15 years old, that hasn't had any kind of energy renovation (wall/ roof thermal insulation, double glazed windows) in the past 10 years?	EE)
2	2	Are you connected to the electricity grid?	
3	3	Do you own a heating system/device?	
4	4	Do you own a cooling system/device?	
5	5	Is your heating system relying <u>only</u> on oil/ gas/ wood burners?	
6	6	Are you the owner of your accommodation?	
7	7	Do you have access to essential services within 1 hour by walking, cycling or public transport?	
8	8	Are you a recipient of the discounted electricity tariff?	
9	9	Are you spending more than 10% of the <u>net household income</u> on energy services?	
10	10	Do you have unpaid utility bills?	
11	11	Are you able to keep home adequately warm?	
12	12	Are you able to keep home adequately cool?	
13	13	Are you considered a displaced person?	
14	14	Are you receiving any kind of welfare monetary support (e.g., minimum guaranteed income, large family stipends)?	€2,000
15	15	Are you unemployed?	IT 2 YEARS
16	16	Are you under 12 years old?	
17	17	Are you over 65 years old?	LAST 2 YEARS
18	18	Is your gross annual income lower than 11,000€?	
19	19	Are you dealing with chronic respiratory and circulatory problems?	
20	20	Is your education level Gymnasium or lower?	
21	21	Are you aware of government support measures related to energy poverty?	THAN €12,000
22	22	If you have had energy problems and are eligible, have you benefited from government support measures related to energy poverty?	R €12,000
16	FAMILIES OF PENSIONERS (OVER 75 YEARS OLD) WITH AN ANNUAL INCOME OF LESS THAN €24,000		
17	FAMILIES OF PENSIONERS (OVER 75 YEARS OLD) WITH AN ANNUAL INCOME OVER €24,000		

Energy poverty in Strovolos - EPAH

- ✓ Energy vulnerable consumers in Strovolos
- ✓ Indicators - energy poverty diagnosis

No	CATEGORIES OF RESIDENTIAL HOUSING
1	INDIVIDUALS – RECIPIENTS OF MINIMUM GUARANTEED INCOME (EEE)
2	DISABLED INDIVIDUALS
3	VACANT DWELLINGS
4	STUDENTS
5	SINGLE WORKING INDIVIDUALS
6	SINGLE UNEMPLOYED INDIVIDUALS
7	VILLAS
8	FAMILIES
9	SINGLE-PARENT FAMILIES WITH AN ANNUAL INCOME OF LESS THAN €12,000
10	FAMILIES WITH TWO UNEMPLOYED – AT LEAST FOR 3 MONTHS IN THE LAST 2 YEARS
11	FAMILIES WITH one UNEMPLOYED PERSON - AT LEAST FOR 3 MONTHS IN THE LAST 2 YEARS
12	THREE-CHILD FAMILIES WITH UNDERAGE CHILDREN
13	LARGE FAMILIES WITH UNDERAGE CHILDREN
14	SINGLE PENSIONERS (OVER 75 YEARS OLD) WITH AN ANNUAL INCOME OF LESS THAN €12,000
15	SINGLE PENSIONERS (OVER 75 YEARS OLD) WITH AN ANNUAL INCOME OVER €12,000
16	FAMILIES OF PENSIONERS (OVER 75 YEARS OLD) WITH AN ANNUAL INCOME OF LESS THAN €24,000
17	FAMILIES OF PENSIONERS (OVER 75 YEARS OLD) WITH AN ANNUAL INCOME OVER €24,000

Energy poverty in Strovolos -

Strovolos indicators	Answer	Energy vulnerability
Do you live in a building over 15 years old, that hasn't had any kind of energy renovation (wall/ roof thermal insulation, double glazed windows) in the past 10 years?	Yes	1
Are you connected to the electricity grid?	No	1
Do you own a heating system/device?	No	1
Do you own a cooling system/device?	No	1
Is your heating system relying <u>only</u> on oil/ gas/ wood burners?	Yes	1
Are you the owner of your accommodation?	No	1
Do you have access to essential services within 1 hour by walking, cycling or public transport?	No	1
Are you a recipient of the discounted electricity tariff?	Yes	1
Are you spending more than 10% of the <u>net household income</u> on energy services?	No	0
Do you have unpaid utility bills?	Yes	1
Are you able to keep home adequately warm ?	No	1
Are you able to keep home adequately cool ?	No	1
Are you considered a displaced person?	Yes	1
Are you receiving any kind of welfare monetary support (e.g., minimum guaranteed income, large family stipends)?	Yes	1
Are you unemployed?	Yes	1
Are you under 12 years old?	Yes	1
Are you over 65 years old?	No	0
Is your gross annual income lower than 11,000€?	No	0
Are you dealing with chronic respiratory and circulatory problems?	No	0
Is your education level Gymnasium or lower?	No	0
Are you aware of government support measures related to energy poverty ?	No	1
If you have had energy problems and are eligible, have you benefited from government support measures related to energy poverty ?	No	1
% of energy vulnerability		77%
Risk of energy vulnerability		Very high

Risk of energy vulnerability	Range for vulnerability classes
Very low	0-0.1
Low	0.11-0.25
Intermediate	0.26-0.5
High	0.51-0.75
Very high	0.76-0.9
Extremely high	0.91-1

Micro-data on energy poverty indicators – Survey

Household demographics



Construction characteristics of the dwelling



Perception of thermal comfort and satisfaction with the dwelling



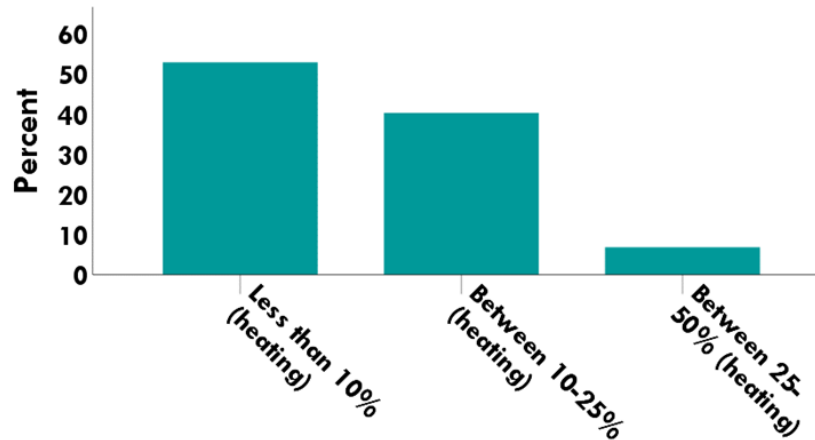
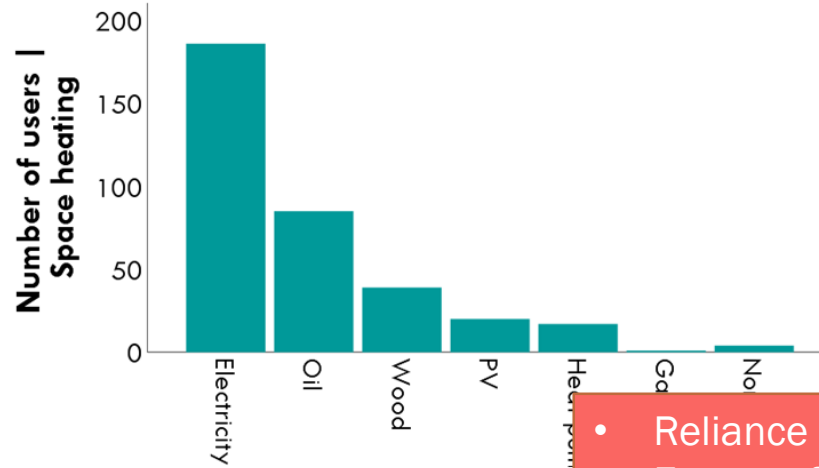
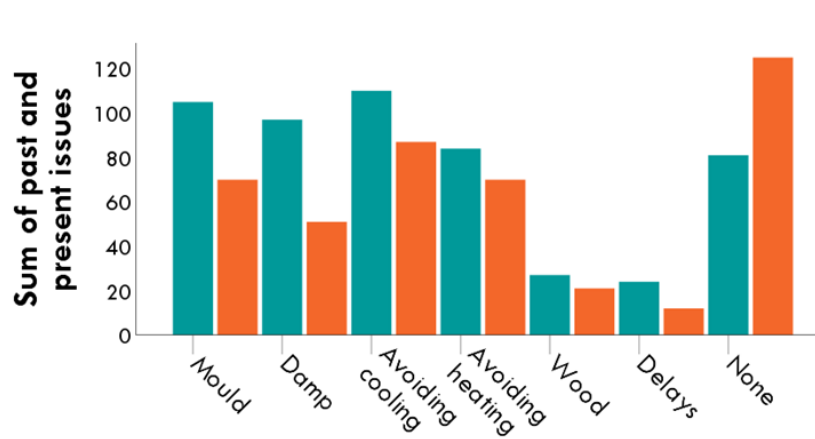
Household socioeconomics



Energy habits (energy sources and portion of income spent towards energy bills)

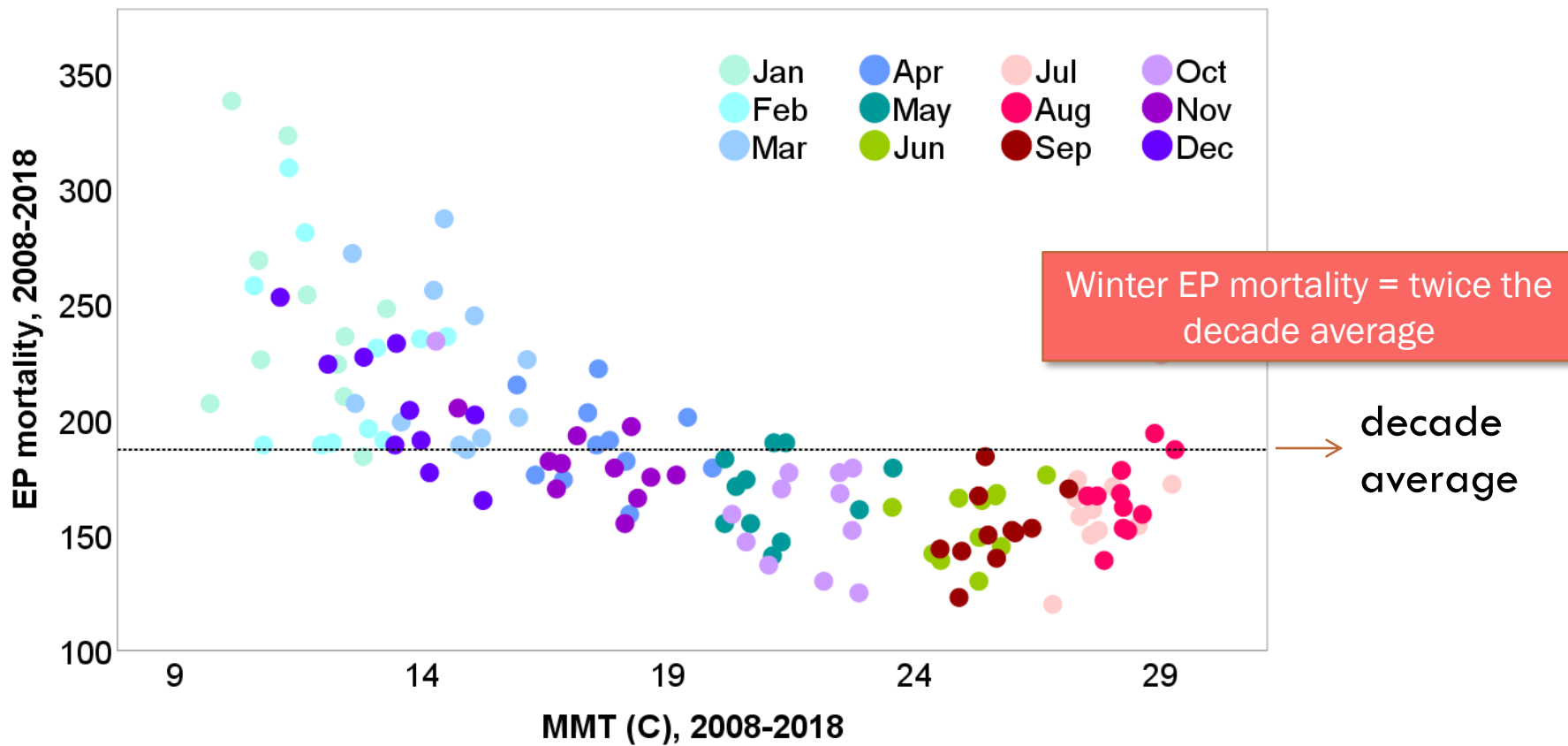


Micro-data on energy poverty indicators – Survey



- Reliance on oil
- Energy affordability

Micro-data on energy poverty indicators – EP related mortality



EP related mortality: Deaths with causes of death related to cardiovascular and respiratory causes of death (ICD-10).

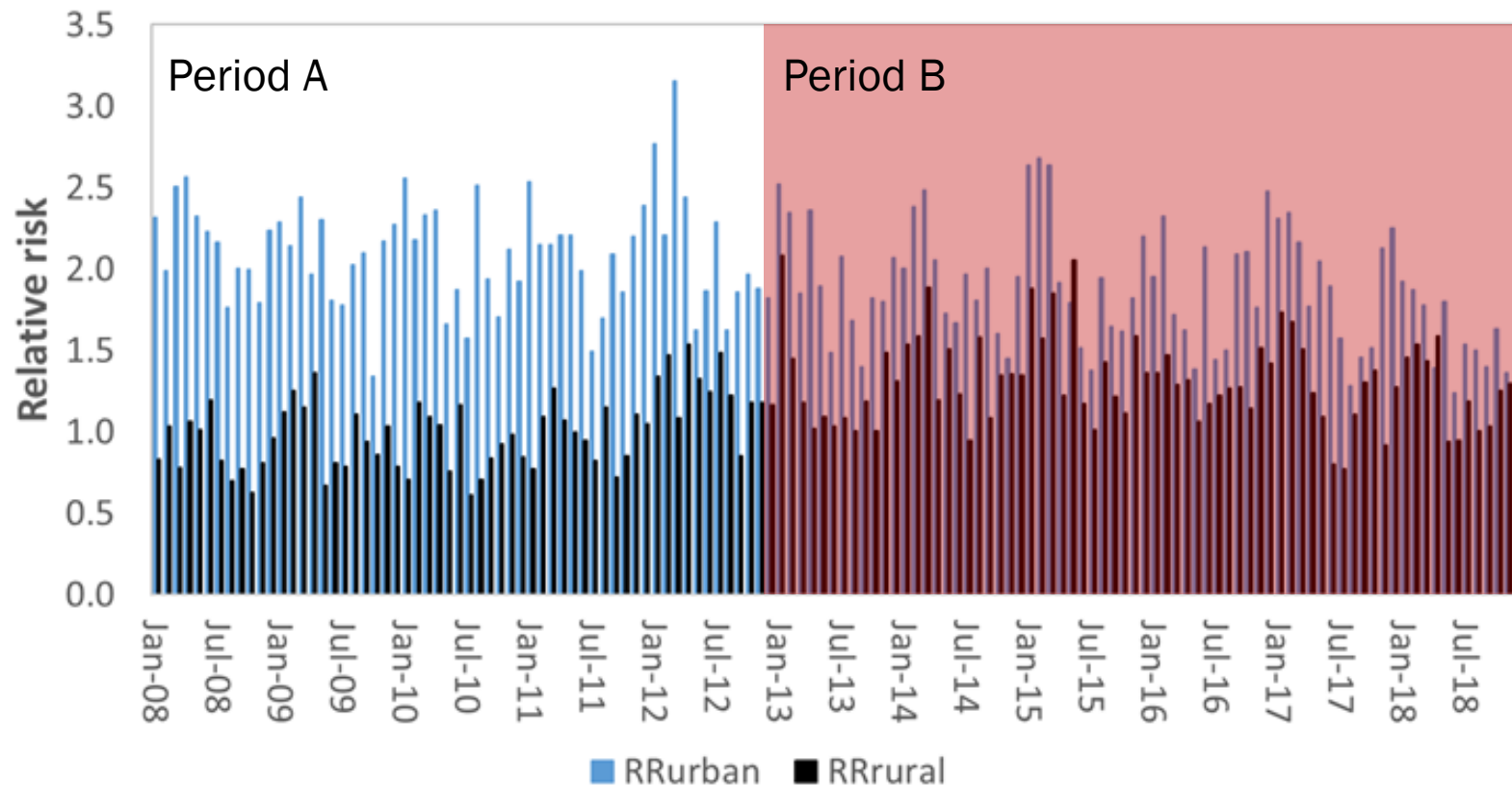
The term does not exclusively attribute the accounted deaths to energy poverty; it merely specifies the higher likelihood of any one of a range of aspects related to energy poverty affecting those deaths.

Micro-data on energy poverty indicators – EP related mortality

YEAR	WINTER DEATHS		NON-WINTER DEATHS		EWD Count	EWD Index
	Previous Dec, current Jan-March	Previous Aug-Nov, current April-July	Previous Aug-Nov, current April-July	Previous Dec, current Jan-March		
2009	1926		3274		289	18
2010	1826		3205		224	14
2011	1890		3369		206	12
2012	2255		3557		477	27
2013	1875		3324		213	13
2014	2083		3389		389	23
2015	2280		3647		457	25
2016	2053		3514		296	17
2017	2490		3720		630	34
2018	2185		3663		354	19
AVERAGE					353	20
MAX					630	34

EU average around 14
(Fowler et al. 2015, Liddell et al. 2016)

Micro-data on energy poverty indicators – Regional dimensions and the banking crisis

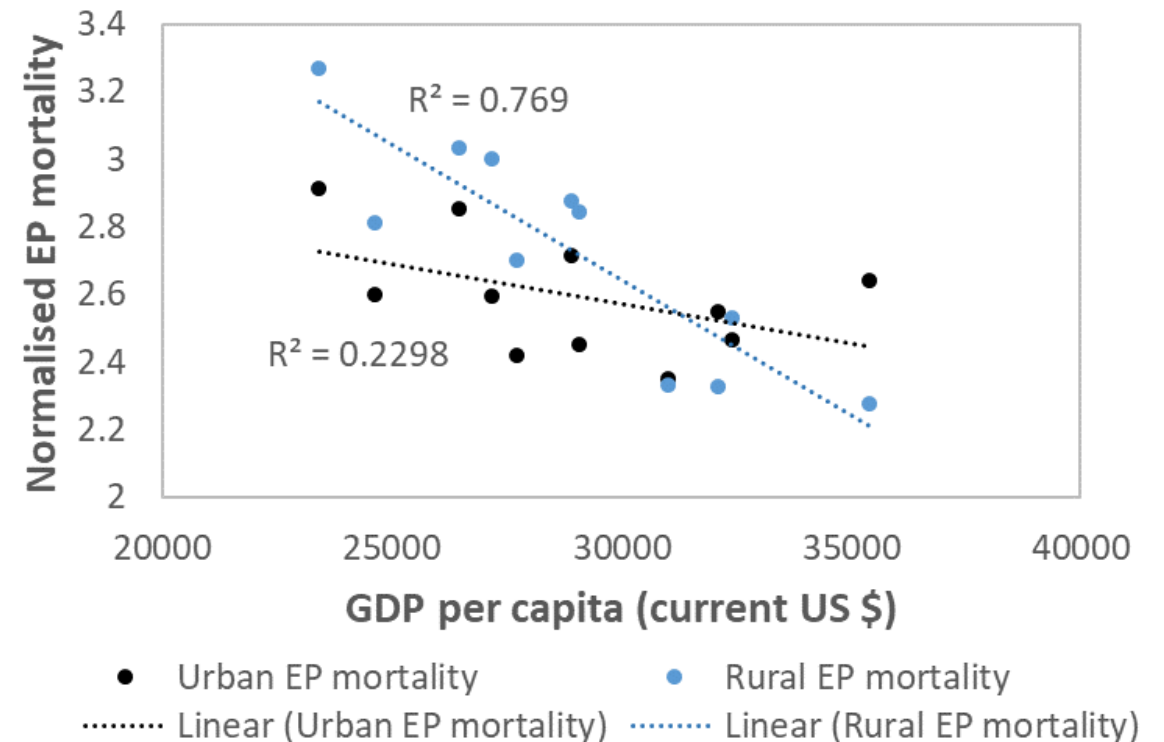


Correlations of mortality (EP or Total) to minimum monthly temperature	Statistical sig.
EP mortality A / Total mortality A	-
EP mortality B / Total mortality B	-
EP mortality A / EP mortality B	*
Total mortality A / Total mortality B	-

Micro-data on energy poverty indicators – Regional dimensions and the banking crisis

The correlation of EP mortality to the minimum monthly ambient temperature before 2013 is significantly different from the same correlation after 2013.

The shock of the 2013 economic crisis severely affected the relationship between ambient temperature and mortality related to EP causes.



Thank you

IOANNA KYPRIANOU, CYI