# Energy Poverty among Youth

### EPHA Conference 2024, Barcelona

Weronika Żurawska (GCE) and Mafalda Estêvão (EYEN)





## About GCE



#### **OUR VISION:**

A future where the **European youth** is instrumental in **shaping** a just and sustainable energy transition *OUR MISSION*:

Build intergenerational **trust**, equip youth with adequate **knowledge** and skills and create **spaces** 

for it to act *OUR MOTTO:* 

Placing youth at the heart of the European energy



Brussels-based, climate-focused advocacy network, uniting the largest youth-led networks in Europe and bringing together 381 national organisations across 46 countries in Europe

### Mission

Uniting European youth networks, GCE creates a **platform** for the youth to advocate directly with the EU for a just and green transition in Europe.

#### Vision

GCE envisions a system that respects human rights and the planet, that includes the voice of youth and acknowledges our common but differentiated responsibility in achieving a carbon-neutral and sustainable world.

## GCE's Report on Energy Poverty among Youth in the EU

#### Report:

Young People and Energy Poverty in the EU

2024



Generation Climate Europe

### In the report

- 1. The status of energy poverty among youth in the EU
- 2. Ways to identify energy poverty among youth
- 3. Clear steps for youth to engage in policy making to alleviate energy poverty
- 4. Analysis of existing policy measures and suggestions to make them more inclusive for youth
- 5. Inspirational case studies

Scan the QR code to access the report





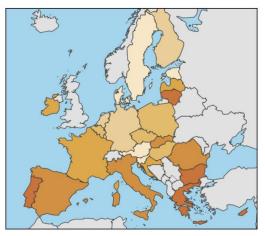
## Status of Energy Poverty among youth in the EU

#### In the report

- 1. Insufficient publicly available data on energy poverty among youth. Data that is available is from 2019.
- 2. In general, the percentage of energy poverty amongst young people is similar to the trend in the whole population.
- A survey launched by Generation Climate Europe found that 60% of surveyed young people are concerned about being able to satisfy their energy needs, including adequate warmth, cooling, lighting, and energy to power appliances.

The countries with the highest share of the young population unable to warm their house as of 2020 were:

- Bulgaria (29.6% among youth vs. 27.5% in the total population)
- **Cyprus** (22.2% among youth vs. 21% in the total population)
- Greece (18.1% among youth vs. 17.1% in the total population)
- Lithuania (18.9% among youth vs. 23.1% in the total population)
- **Portugal** (17.8% among youth vs. 17.5% in the total population)





# **Youth and Energy Poverty**

#### 1. Young Energy Consumer Profile

- **Age**: 16-30
- **Occupation:** students, hospitality, young workers, young professionals
- Income: no income or lowest salary brackets
- **Contracts**: part-time or temporary contracts, junior positions
- Accommodation: urban areas and renting alone or shared

#### 2. Vulnerability

- Reduced disposable income
- Renting: lower grade efficiency houses and limits to improve energy efficiency
- No benefits from subsidies and support for vulnerable consumers
- 3. Energy Consumption and Climate Awareness
  - Environmentally conscious and concern in reducing carbon footprints
  - Early adopters of smart energy tech
  - More likely to pay more for sustainable solution, with budget

# INSUFFICIENT

Analysis revealed a scarcity of data on youth and energy poverty, along with a absence of policies and programs directly focusing on or benefiting young individuals.



## Engaging youth in policymaking to alleviate energy poverty

### **European Union**

- 1. Make publicly available data on energy poverty among age groups on Eurostat.
- 2. Provide Member States with clear guidance on meaningful youth engagement when implementing EU policies on just transition, especially those targeting energy poverty.
- 3. Ensure that energy poverty is included in the agenda for the Youth Policy Dialog with the Commissioners.

### National and local authorities

- 1. Consider youth as a vulnerable group regarding energy poverty.
- 2. Conduct meaningful public consultations with youth on measures for the National Social Plans (eg. Youth Energy Ambassadors and hackathons for youth)
- 3. Establish Youth Councils to address climate-related policies, including energy poverty matters.
- 4. Create and implement more inclusive policy measures (eg. Minimum Energy Performance Standards for Rental Properties, Early Lease Termination)
- 5. Encourage local authorities to engage with local youth to understand their energy poverty issues and channel comprehensive recommendations to national authorities



# Energy poverty in the EU

Methods, trends and indicators

Erhan OZDEMIR Giorgos KOUKOUFIKIS

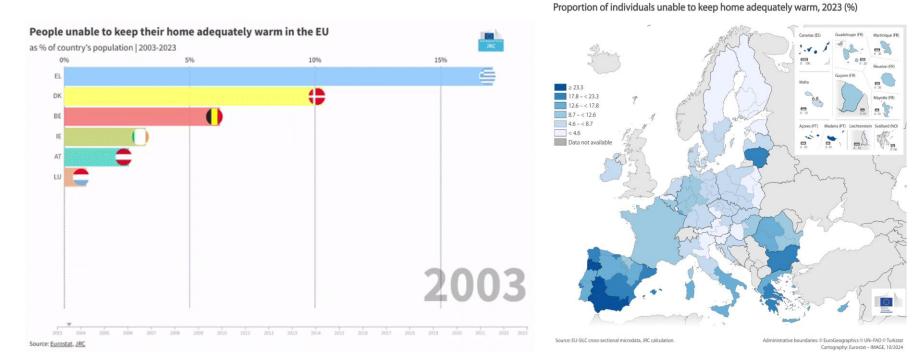
Energy Poverty Advisory Hub conference 15-16/10/2024, Barcelona

Joint Research Centre

### Recent publications from the just transition team in JRC



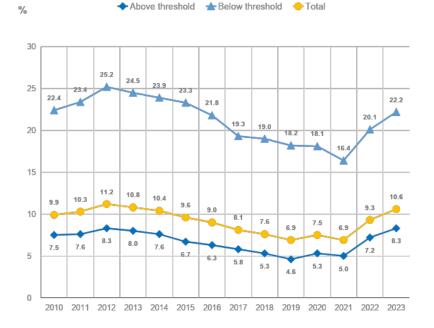
## Historic trends and regional variations



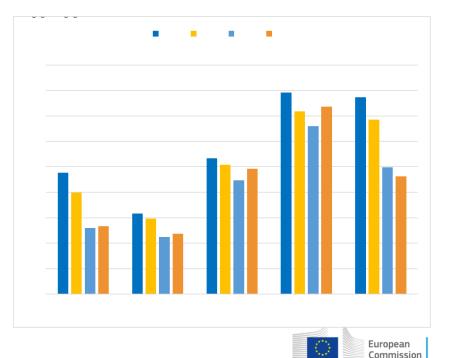


## Socioeconomic drivers of energy poverty

Individuals unable to keep their home adequately warm by at-risk-of-poverty threshold status



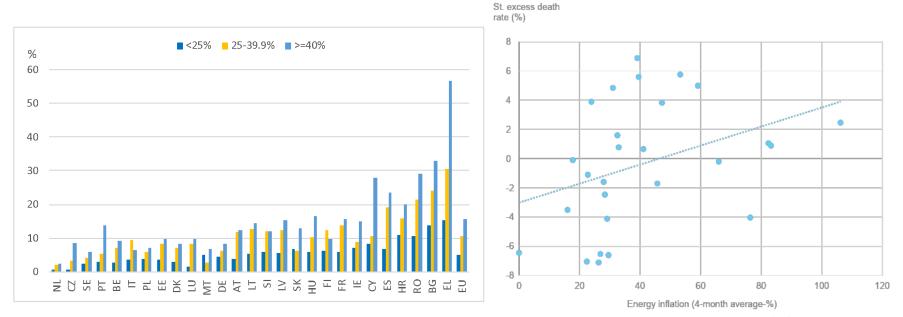
Individuals with arrears on utility bills by tenure status, 2023



### Housing costs and health considerations

Individuals with arrears on utility bills by the ratio of total housing costs relative to income, 2023 (%)

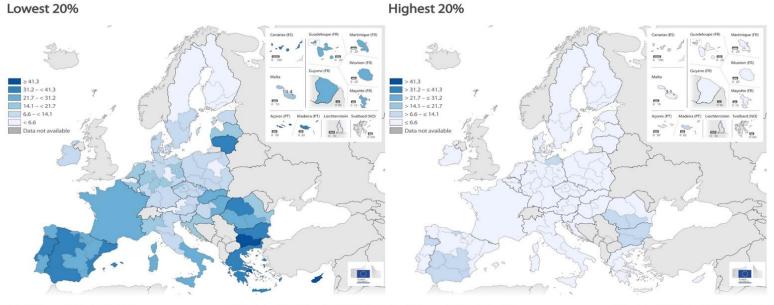
Relation between standardised excess death rate and energy inflation (Nov 2022-Feb 2023)





## Income inequalities

Proportion of individuals unable to keep the house warm per region, according to income quintiles, 2023



Source: EU-SILC cross-sectional microdata, JRC calculation.

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat Cartography: Eurostat - IMAGE, 10/2024

Source: EU-SILC cross-sectional microdata, JRC calculation.

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat Cartography: Eurostat - IMAGE, 10/2024

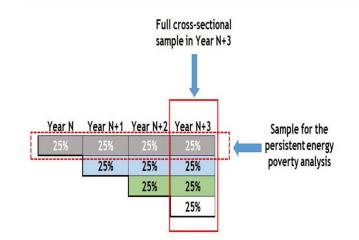


Persistence of Energy Poverty in the EU

### How is the persistency rate defined?

"the percentage of the population living in energy-poor households for the current year and at least two out of the preceding three years"

- It is the same Eurostat methodology for persistent at-risk-of-poverty rate<sup>1</sup>
- It corresponds to "70% of time in the given period" criteria used in the literature<sup>2</sup>

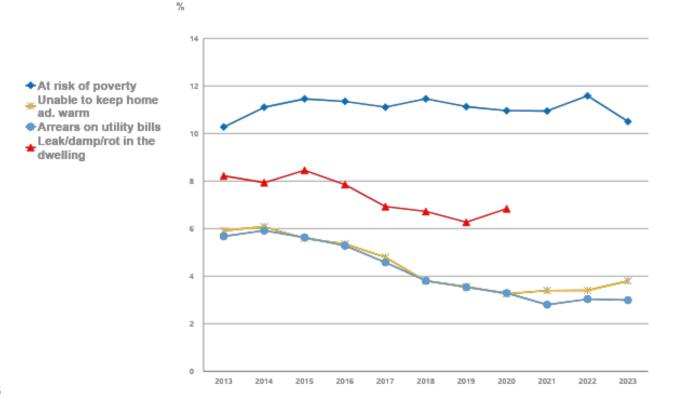


<sup>1</sup> Eurostat <u>https://ec.europa.eu/eurostat/statistics-</u> explained/index.php?title=Glossary:At-risk-of-poverty\_rate

<sup>2</sup> Drescher, K. and Janzen, B. (2021) Determinants, persistence, and dynamics of 14 energy poverty: An empirical assessment using German household survey data. *Energy Economics*, 102 (2021) 105433, <u>https://doi.org/10.1016/j.eneco.2021.105433</u>



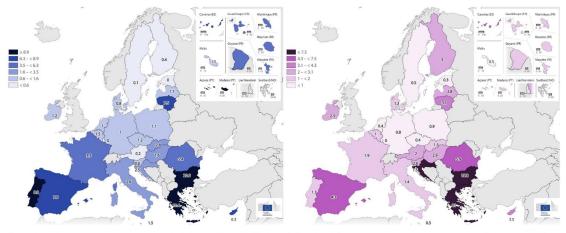
# Persistency rates for monetary poverty and energy poverty indicators, EU, 2013-2023 (%)



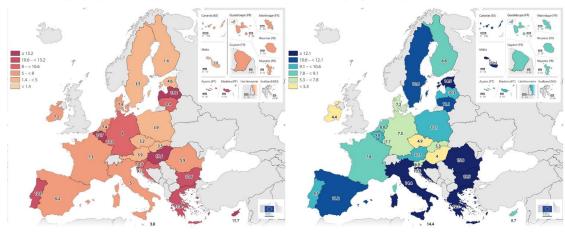


#### Persistency of being unable to keep home adequately warm, 2023 (%)

Persistency of having arrears on utility bills, 2023 (%)



Note: Figure for LU refers to 2022. Source: EU-SILC longitudinal microdata, JRC calculation. Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat Cartography: Eurostat – INAGE, 10/2024 Source: EU-SILC longitudinal microdata, JRC calculation. Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat Cartography: Eurostat – IMAGE, 10/2024



Persistency of having leak, damp or rot in dwelling, 2020 (%)

#### Persistent at risk of poverty rate, 2023 (%)

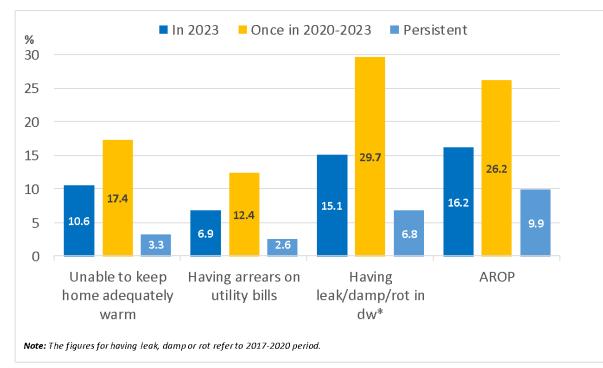
Note: Figure for DE refers to 2019. Source: EU-SILC longitudinal microdata, JRC calculation.

16

Administrative boundaries: © EuroGeographics © UN-FAQ © Turkstat Cartography: Eurostat – IMAGE, 10/2024 Source: EU-SILC longitudinal microdata, JRC calculation. Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat Cartography: Eurostat – IMAGE, 10/2024

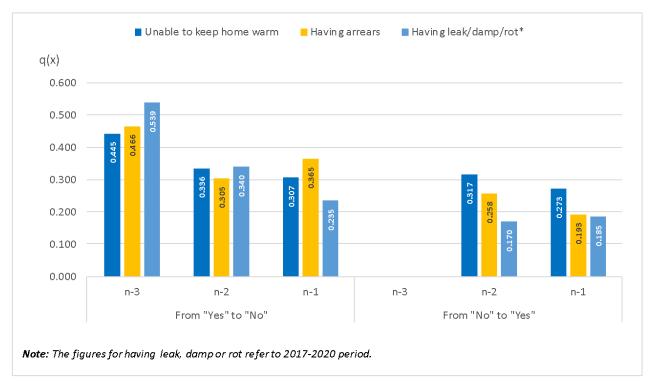


# Proportion of individuals experienced energy poverty at least once in last 4 years





### Probabilities for transition between "energy poor" and "nonenergy-poor"





### Multilevel mixed effects logistic regression fixed effects

	Unable to keep home ad. warm	Having arrears on utility bills	Having leak/damp/rot in dwelling
Socio-demographics	<ul><li>Age</li><li>Change in HH size</li></ul>	• Age	• None
Socio-economic	<ul> <li>AROP</li> <li>Arrears</li> <li>Leak/damp/rot</li> <li>Housing costs</li> </ul>	<ul> <li>AROP</li> <li>Unable to keep home warm</li> <li>Leak/damp/rot</li> <li>Housing costs</li> </ul>	<ul><li>AROP</li><li>Arrears</li><li>Housing costs</li></ul>
Contextual	<ul> <li>Social protection expenditure</li> <li>Dwelling energy efficiency</li> </ul>	• None	<ul> <li>Social protection expenditure</li> <li>Dwelling energy efficiency</li> </ul>
Period	No effect	No effect	No effect



## Conclusions

The persistence of energy poverty is a fact in all EU countries, though there are significant discrepancies across EU Member States.

♦ Bulgaria and Greece have the highest rates of persistence

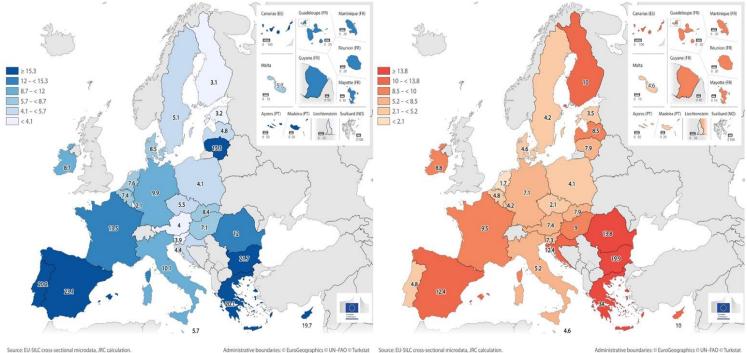
Socio-economic well-being and energy efficiency of the buildings are the main determinants

No gender gap in the persistency of energy poverty

Social protection expenditure and average per dwelling energy efficiency are influential macro-level factors



# Energy Poverty among the Young in the EU



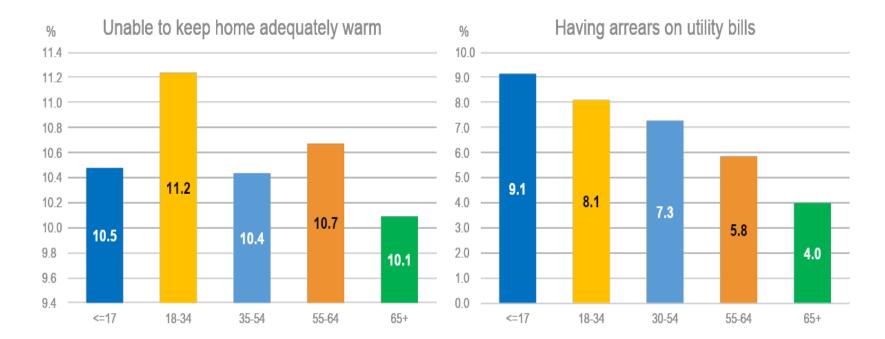
Cartography: Eurostat - IMAGE, 10/2024

Proportion of individuals aged 18-34 unable to keep home adequately warm, 2023 (%) Proportion of individuals aged 18-34 having arrears on utility bills, 2023 (%)

Administrative boundaries: © EuroGeographics © UN–FAO © Turkstat Cartography: Eurostat – IMAGE, 10/2024

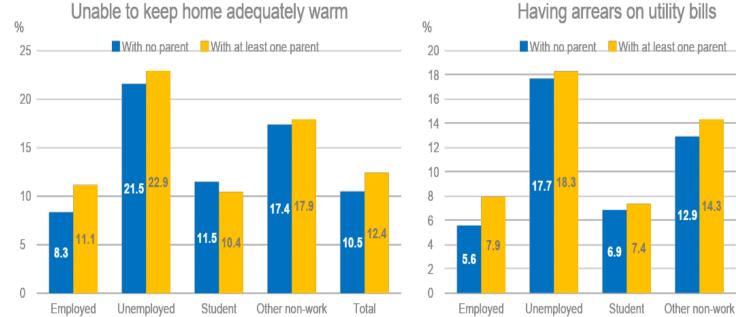


# Energy poverty rates in each broad age group, EU, 2023 (%)





### Energy poverty by economic activity and living with parents status, EU, 2023 (%)

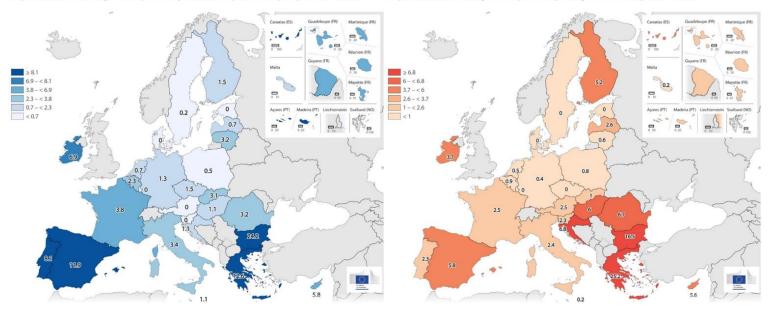


14.3 12.9 7.3



Total

### Persistency of energy poverty among young individuals



Proportion of individuals aged 18-29 persistently unable to keep home adequately warm, 2023 (%)

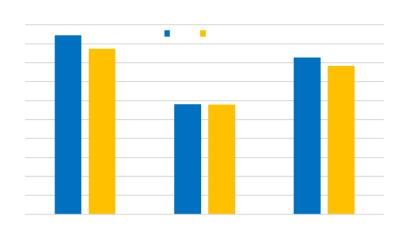
Proportion of individuals aged 18-29 persistently having arrears on utility bills, 2023 (%)

Note: Figure for LU refers to 2022. Source: EU-SILC longitudinal microdata, JRC calculation. Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat Note: Figure for LU refers to 2022. Cartography: Eurostat – IMAGE, 10/2024 Source: EU-SILC longutidunal microdata, JRC calculation.

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat Cartography: Eurostat - IMAGE, 10/2024



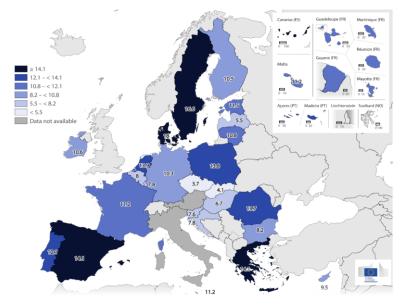
# Expenditure-based energy poverty for households with individuals aged 20-34



LJ - -

-----

Proportion of energy poor households according to 2M with members aged 20-34, 2015 (%)



Source: HBS microdata, JRC calculation.

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat Cartography: Eurostat – IMAGE, 10/2024



- // - ....

## Conclusions

Different patterns for the young population in being unable to keep home adequately warm and having arrears on utility bills

Remarkable variations are observed across Member

Recently, young individuals are more likely to have problems in heating their homes while they face less problems in having arrears on utility bills

Household characteristics and economic activity status are significant factors in determining energy poverty among the young people

Persistency rates for energy poverty are relatively smaller compared to the overall population



# Thank you



© European Union, 2024

Unless otherwise noted the reuse of this presentation is authorised under the <u>CC BY 4.0</u> license. For any use or reproduction of elements that are not owned by the EU, permission may need to be sought directly from the respective right holders.









EPAH Barcelona, 15 Oct 2024

# València Pilot Projects

Inclusive energy sharing models to fight energy poverty & empower citizens



This project has received funding from the European Union's Horizon 2020 research and innovation program under Grant agreement No. 101033940





**POWER UP** aims to promote the emergence of local energy market players with a **socio-ecological** agenda via engaging vulnerable households to co-design new business schemes around renewable production and energy efficiency



### 4 living labs - 4 different business models

From collective energy consumption to social cooperative shares, the pilots act as "living labs" through new ways of sharing energy with households affected by energy poverty.

#### Sources of profit generation & Estimated individual impact

	Incentives sharing	Energy saving	Energy selling	Lower energy price	VH annual economic saving	VH annual net economic saving
UCSA	x				165 €	165 €
Valencia		×	×		170 €	170 €
Roznov		×			83 €	23 C
Eeklo				×	160 €	120 €

VH = vulnerable households





Energy services alleviating energy poverty Financial and commercial business cases of 4 pilot areas

POVER



Guidelines on renewable energy production business case: How to do, what to take into account



Funding opportunities for energy efficiency and energy community projects

POVER

Browse our library

31

# València objective: Promotion of different models

- Renewable Energy Communities
- Public service of renewable self-consumption
- **Crowlending** PV plant on a Municipal rooftop

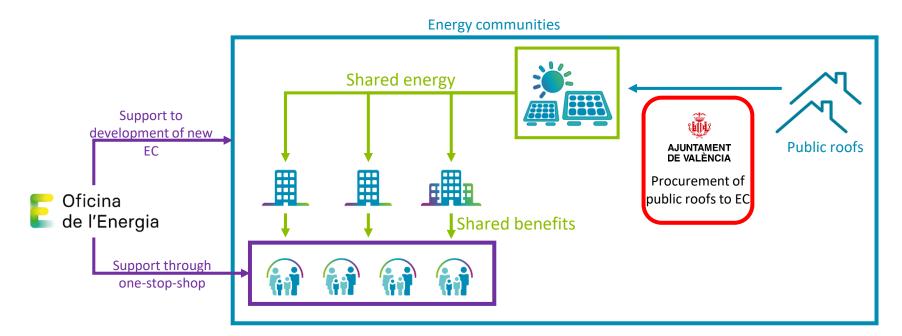




# Neighbourhood Energy Communities

www.socialenergyplayers.e

# Valencia Pilot – Energy Communities (EC)



www.socialenergyplayers.e

# CEL Castellar-L'Oliveral



[First successful case of Energy Community in València]



- Technical, legal and administrative support from the foundation VCE through its Energy Office.
- Intermediation between association, installation company, DSO, licensing authorities...
- **Facilitator** of public roof lent to the association during the project lifetime (at least 25 years).
- VCE as a member, acquires 3 kWp and distributes them for free among vulnerable households (yearly re-assessment).
- Beneficiaries selected in coordination with **Social Services** (vulnerability criteria).

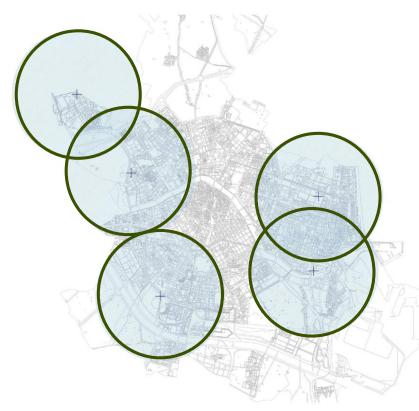


# Réquiem in Power (RIP) project

Public Service of Collective Selfconsumption

www.socialenergyplayers.e

# Valencia Pilot – Public Service Model

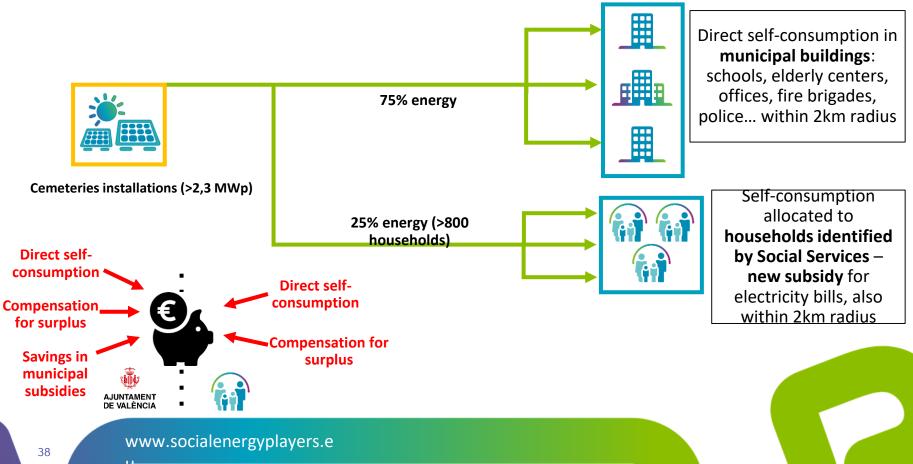






#### www.socialenergyplayers.e

# Valencia Pilot – Public Service Model





# Las Naves Brillen

Green and innovative citizen investment

www.socialenergyplayers.e





#### Video (ENGL)

- **Collective citizen financing model** (citizen crowdlending) for the installation of a municipal PV plant (in Las Naves)
- More than 60 citizens invested between 100 y 2.000€
- The revenue (savings) generated by the PV plant becomes an economic return for the investors & the municipal revenues will be reinvested in **energy poverty mitigation measures** (energy efficiency kits)

#### www.socialenergyplayers.e

#### **Opportunities**



#### Citizens' empowerment

Fosters citizen's participation in the energy transition, helps create a network of Energy Communities in the city, having the Right to Energy as one of the core principles.



#### Pilot projects - Public service

Demonstrate the viability of innovative projects to show the way to the whole society, creating a more accessible model.

#### **Energy transition acceleration**

Social leadership and energy culture is the key to accelerate the pace, producing radical and lasting transformations.



Just and democratic transition

Cooperation and association models that promote a fairer, more efficient and **collaborative use of energy**.



# Thank you!

<u>Claudia.ferre@lasnaves.com</u> <u>victoria.pellicer@climaienergia.com</u>





València Clima i Energia



## **WORKSHOP**

# Help us to create a toolkit to engage with vulnerable households in longlasting renewable projects by answering the following questions

#### **Discussion prompts:**

- **1. Build trust to successfully develop the project** (Consider aspects like transparency, forming alliances with facilitators, and other trust-building strategies.
- 2. Best ways to reach vulnerable populations (Think about the channels to use, the messages to convey, and the key stakeholders to engage)
- **3.** *Keep participants engaged throughout the project's duration* (Discuss the benefits and commitments that can help maintain participant involvement, Benefits & Commitments)
- **4.** *Involve diverse people* (Explore solutions for accessibility, addressing special needs, language adaptation, and support for carers)

# *Involve diverse people* (*Explore solutions for accessibility, addressing special needs, language adaptation, and support for carers*)

\*If you have time you can think of the benefits and challenges of the proposals

- 1. How to guarantee a diverse membership?
- 2. Information in different languages and sign language or images?
- 3. Where to do the communication campaign?

#### Keep participants engaged throughout the project's duration -years (Discuss the benefits and commitments that can help maintain participant involvement, **Benefits & Commitments**) \*If you have time you can think of the benefits and challenges of the proposals

- 1. How to share the kW of energy?
- 2. What other benefits can be offered?
- 3. What commitments cas we ask for?
- 4. Reward or pay for participation?
- 5. Compensation for time?
- 6. Offer workshops?, which topics?

**Best ways to reach vulnerable populations** (Think about the channels to use, the messages to convey, and the key stakeholders to engage) \*If you have time you can think of the benefits and challenges of the proposals

- 1. What channels and facilitators to use?
- 2. Multi-channel stakeholders?
- *3.* What type of communication campaign?
- 4. How to avoid exclusión of certain groups?

Build trust to successfully develop the communitarian renewable project (Consider aspects like transparency, forming alliances with facilitators, and other trust-building strategies. \*If you have time you can think of the benefits and challenges of the proposals

- 1. What is engagement?
- 2. How to build close relationships (actions, stakeholders that can be involved)?
- 3. What information needs to be shared and how with the participants (to be transparent)?
- 4. Is it useful to use existing channels, which ones?
- 5. How not to be stigmatising?
- 6. How to find the balance of personalization or groupping to make sure everyone has understood all the information?



**Empowering** People. Marketplace for Energy Communities



# Content

- **1.** Energy Community (EC) definition
- **2.** Models of Development
- **3.** Main problems of the development of the ECs
- 4. Neargy solution
- **5.** SDG Development Impact
- **6.** Q&A





## **Energy Communities definition**

RD 23/2020 -> Law 24/2013: "These are legal entities based on open and voluntary participation, autonomous and
effectively controlled by partners or members who are located in the vicinity of renewable energy projects (2km)
that are owned by these legal entities and that have been developed by them."

#### **Members**

- Individuals
- SMEs
- Local authorities

#### **Objectives**

- Environmental, economic, or social **benefits** for their **members** or **local areas**.
- Address Energy poverty
- **Decentralized** Energy consumption

#### Rights. RD 5/2023

- Produce, store, consume, and sell renewable energy.
- **Proximity of less than 2 kms** to renewable energy projects.



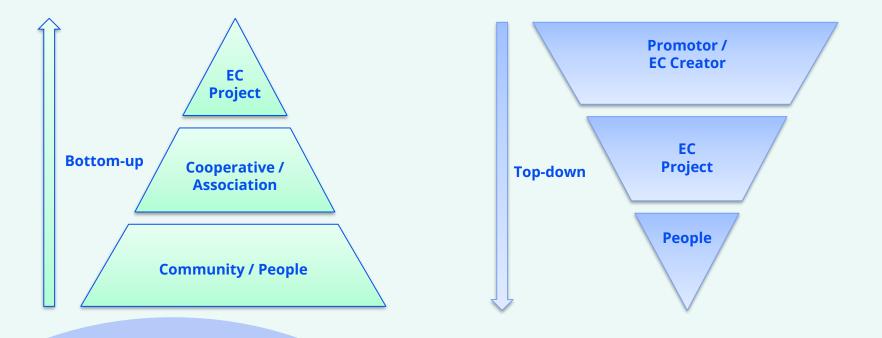
## **Solar Communities?**



A **Solar Community** refers to a **shared-self consumption** mechanism that uses only solar PV. It is a type of **Energy Community** and usually it requires changing utility company.



# Models of development of Energy communities





## Example Bottom-up: Cooperativa Society Luco Energía



Location	tion Luco de Jicola, Teruel		
Generation	60 kW		
Members	25 partners (households, municipal equipment and PYME)		

- 1. Formation of the core group
- 2. Communication and dissemination of the project within the community.
- 3. Formation of the cooperative with the members
- 4. Request for budgets and search for funding and grants.
- 5. Development of the technical project. Solar PV



#### Example Bottom down: TEK - Edinor

TEK-Edinor is an energy transition project accelerator, specialized in the development of energy communities.

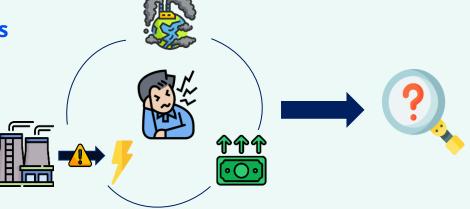




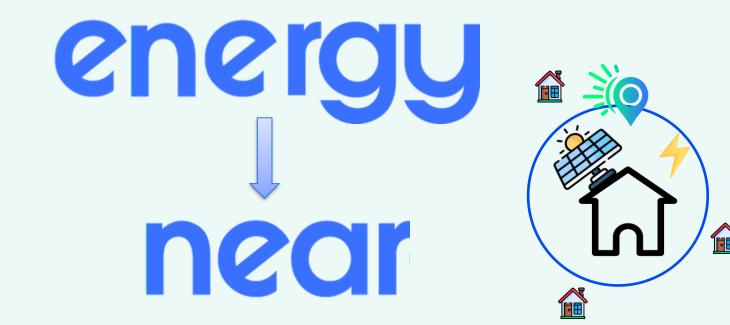
## **Main problems**

- 1. Lack of Knowledge and Awareness
- **1. Regulatory Framework**

**1. Complex procedure** 

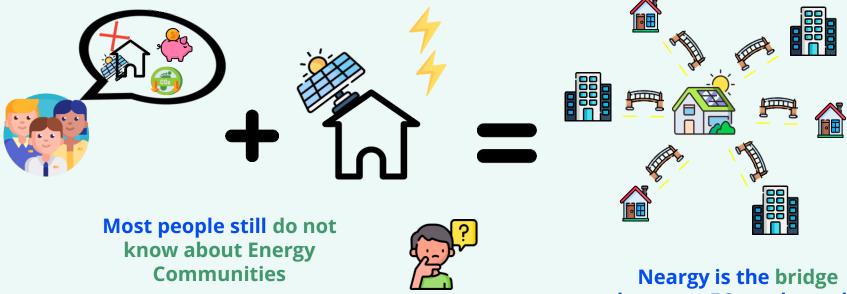








## **Solution for Energy Communities**



between ECs and people

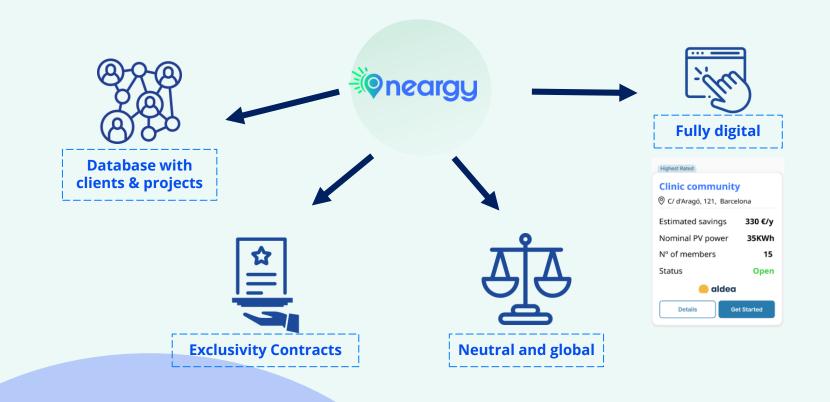


## **Neargy Solution**



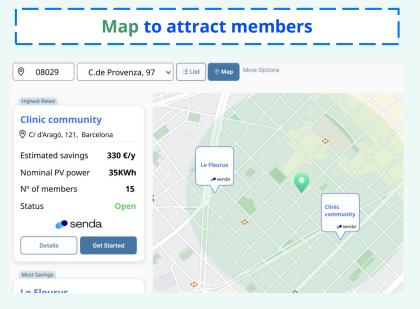


## Value proposition





#### Value proposition



Leads acquisition for Energy Communities

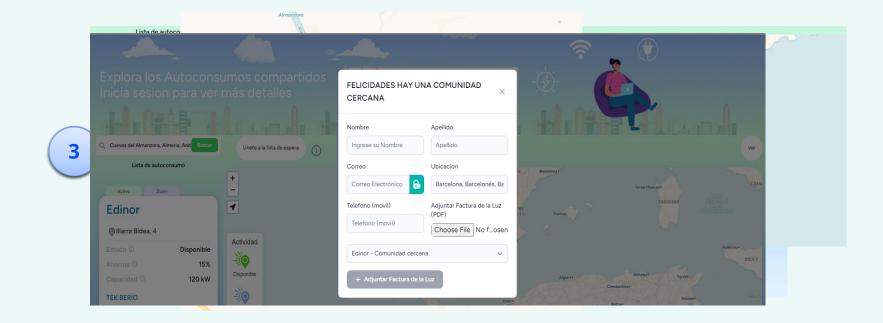
#### Database with registered users

Full Name	Status	City	Date
Wade Warren	Active	Barcelona	21 Sept, 2021
Jerome Bell	Inactive	Madrid	5 May, 2022
Kathryn Murphy	Active	Barcelona	22 Aug, 2021
Ralph Edwards	Inactive	Sevilla	8 Abr, 2022
Bessie Cooper	Disabled	Madrid	7 Jun, 2021
Peter Pan	Inactive	Sevilla	22 Mar, 2022
John Cena	Active	Barcelona	12 Oct, 2021

# Identification of new opportunities to develop future projects



## Use case 1 (Almeria) - Edinor





## **SDG Development Impact**

Affordable Energy

#### **Energy supply**

Reduction by up to 60% in the electricity bill

Digitalization, Decentralization and Democratization Carbon footprint reduction

Energy Sharing by means of an Energy Community

Neargy is aligned with the Sustainable Development Goals of the United Nations





## **Our Journey**

#### Events, awards









Adrian Brasero Product owner



Gonzalo Olaso Business Developer



Guillem Álvarez Software developer

Our Objective? To become the largest energy community network in Spain by 2027



Thanks!

#### Empowering People. Marketplace for Energy Communities

# Trama TecnoAmbiental (TTA) Company Profile

Energy Poverty Advisory Hub Annual Conference 15th October 2024



The information contained in these documents is confidential, privileged and only for the information of the intended recipient and may not be used, published or redistributed





**Trama TecnoAmbiental, S.L (TTA)**, is a global consulting and engineering company based in Barcelona, Spain

MISSION: "Empower communities worldwide by providing integrated energy technologies with tailor-made and future-proof solutions"

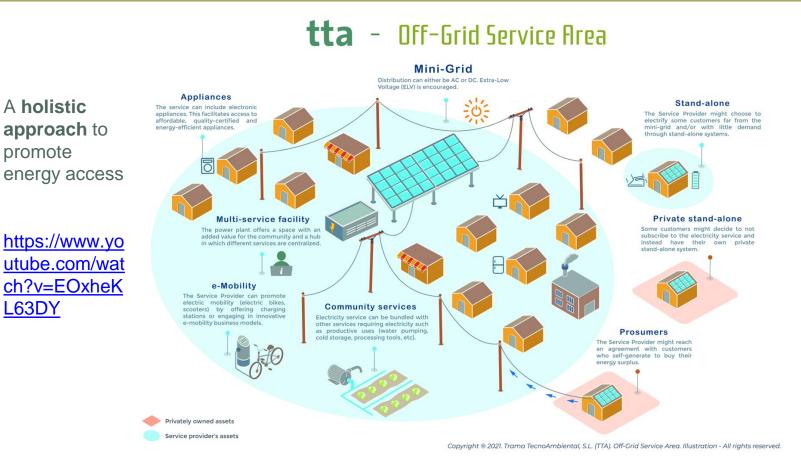
**VISION:** "Our vision is a world where all can reach their full potential through access to essential resources. As a pioneer in this sector, we strive to be a benchmark firm enabling positive impact for our clients"



> 100% sustainable energy

#### **OUR APPROACH**





The information contained in these documents is confidential, privileged and only for the information of the intended recipient and may not be used, published or redistributed



#### SOME EXAMPLES

The information contained in these documents is confidential, privileged and only for the information of the intended recipient and may not be used, published or redistributed

75







The information contained in these documents is confidential, privileged and only for the information of the intended recipient and may not be used, published or redistributed

#### PV ON SCHOOL PATIO PERGOLA = BRINGS SHADED SPACE





The information contained in these documents is confidential, privileged and only for the information of the intended recipient and may not be used, published or redistributed

#### **ENERGY MANAGEMENT WITHIN THE MINIGRID**



Objective: to manage the solar energy that is made available among the mini-grid users

Every user has an energy meter that provides more or less availability depending on the mini-grid status (e.g. batteries full or not, high power available contracted energy



The size of the tank represents the maximum capacity

The level represents the energy available of the user

The tank is emptied based on user demand and pricing at every moment

#### **EXAMPLES OF PRODUCTIVE USES**









#### Guest house (freezer, washing machines



The information contained in these documents is confidential, privileged and only for the information of the intended recipient and may not be used, published or redistributed

#### 5 MINI-GRIDS IN BURUNDI (2015-2021)





The information contained in these documents is confidential, privileged and only for the information of the intended recipient and may not be used, published or redistributed

#### BUILDING WITH ADDED-VALUE: SHADED SPACE FOR COMMUNITY USE





#### ABOUT SESMA BURUNDI





Mme. NKESHIMANA Jeanine Kazirabageni - Buheka



M. INGABIRE Fleury Marie Technicien & Responsable Ndava



M IDADUKUNDA Samue Maintenance Kazirabageni - Buheka



M. NIYOKWIZERA Mechac Administration & Finances Kinzanza - Gatereni

#### SESMA Burundi s.a.

- Private company, created in 2020 •
- 15 Burundian employees •
- Engineering+Construction and O&M • of solar plants
- · Operator of 5 solar mini-grids for more than 2 years



Technicien & Responsable

Maintenance

Kinzanza – Gatereni

M. KABURA Hilaire SESMA Burundi





M. UMDABAGENZI Eric SESMA Burundi



M. NTAKO Francis SESMA Burundi, Bujumbura









The information contained in these documents is confidential, privileged and only for the information of the intended recipient and may not be used, published or redistributed

#### **EXAMPLES OF BENEFITS TO USERS**



Melchiad: "A lot more customers; less expenses compared to the purchase of candles»

Prosper: "Increase in customers, permanent electricity, radio station operating »

Nestor: "Sufficient electricity that enables the delivery of services to patients. »

- Dr Inês : "Electricity helps with **night work** and especially in the **maternity** ward. There are no more power cuts, computers also operate properly »
- Israel: "Allows the use of a **sewing machine** and working even **at night**; offers people around you the opportunity to charge their **mobile phones**. »
- Gilbert: "Increase in customers, no outages, unlike before; before we used the domestic solar PV system which did not have sufficient capacity»
- Béatrice: "Children **study very well in the evenings**, no more costs to buy batteries for flashlights»

Emmanuel: "Good storage of milk and others in the fridge. »





Renewable Energies • Energy Efficiency • Sustainable Buildings • Distributed Generation

# THANK YOU GRÀCIES

Unai Arrieta Interregional Team Leader unai.arrieta@tta.com.es

# **WORLD CAFE**

## Questions

- 1. How can we foster meaningful collaboration between national and local authorities, local organizations, and youth to effectively tackle energy poverty?
- 2. What regulatory changes are needed to prevent discrimination against youth in energy poverty alleviation measures, particularly within the context of energy communities?
- 3. How can we leverage the European Union's experience and expertise to support the energy transition in the Global South?

