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**CLEAN**

# Workshop «EU Energy Policy and Recent Efficiency Directive Developments»

**GOVERNANCE TOOLS AND INTEGRATED ENERGY PLANS  
TRACKLING ENERGY POVERTY: THE EPAH TECHNICAL  
ASSISTANCE FOR LEVERANO MUNICIPALITY**

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e Architetti**

November 5<sup>th</sup>, 2024



# Framework of the research

**Cities:** 75% of Europeans live in urban areas, this percentage will increase to 84% by 2050. Cities show greater inequalities than rural areas.



**Climate-neutral city:** 1) minimized carbon footprint and energy demand; 2) fully renewable and clean energy supply; 3) local energy resources intelligently managed by conscious citizens.



**Active role of citizens in the energy transition process.**

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**MULTILEVEL POLICIES AND INITIATIVES ON THE ENERGY TRANSITION**

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**GOVERNANCE TOOLS AND STRATEGIES FOR A JUST ENERGY TRANSITION**

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**INTEGRATED ENERGY PLANS TO TACKLE ENERGY POVERTY**

**CASE STUDY: EPAH TECHNICAL ASSISTANCE FOR THE MUNICIPALITY OF LEVERANO**



# Analysis of the regulatory framework

## EUROPEAN LEVEL POLICIES

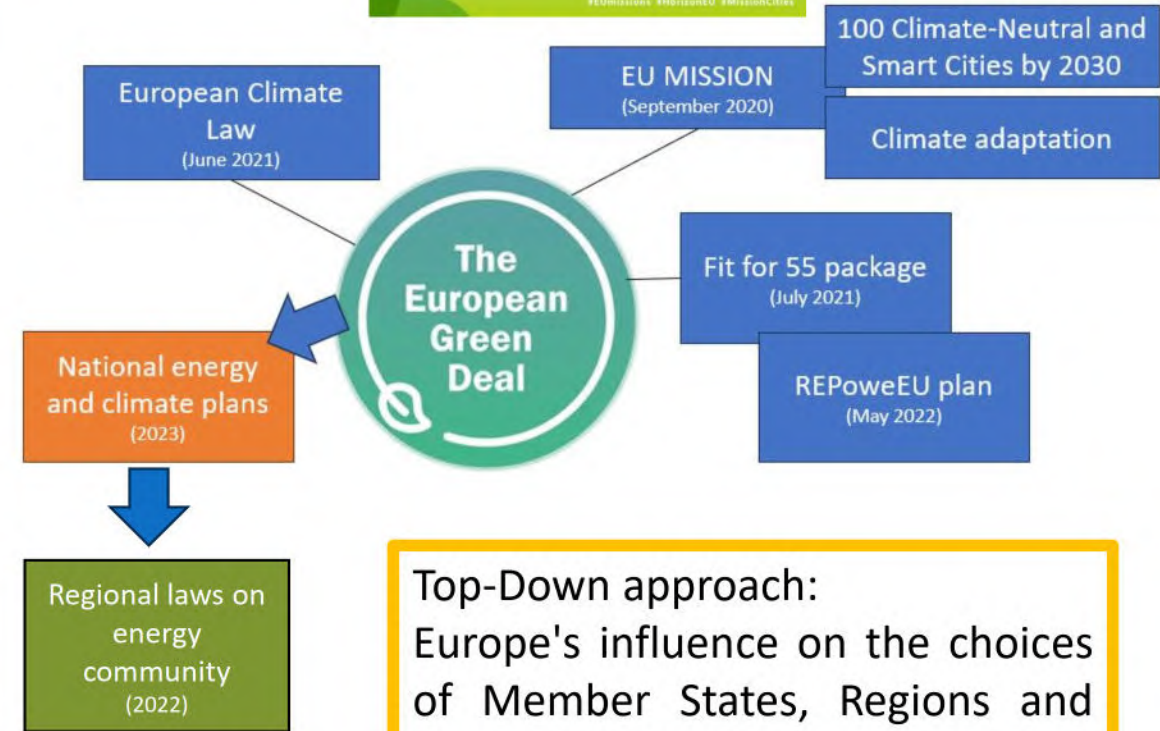
- European Green Deal
- REPowerEU Plan
- Clean energy for all Europeans package
- Focus on energy community EU policies and definitions
- Social climate fund

## NATIONAL LEVEL POLICES

- National energy and climate plans
- Italian energy and climate directives
- Focus on energy community Italian policies

## REGIONAL LEVEL POLICES

- Energy communities' regional laws



Top-Down approach: Europe's influence on the choices of Member States, Regions and local administrations.

**ENERGY AND CLIMATE PLANS**

- Integrated energy plans developed within SMARTENCITY project (GA n. 691883)
- SECAP: Sustainable Energy and Climate Action Plans

**ENERGY POVERTY ADVISORY HUB****RENEWABLE ENERGY COMMUNITY****CITIZENS' ENGAGEMENT: DATA SHARING AND COMMUNICATION PLATFORMS**

- Community Transition Pathways developed within GRETA project (GA n. 101022317)
- Involvement and awareness actions of citizens
- One-Stop-Shops for energy renovations of buildings



**INCLUSION OF ENERGY POVERTY PILLAR WITHIN THE ENERGY PLANS**

- Projects to identify energy poverty across EU
- Vulnerable people mostly affected by climate change
- Energy poverty's indicators

**LEVERANO MUNICIPALITY CASE STUDY**



**Patto dei Sindaci**  
per il Clima e l'Energia  
EUROPA



**EU**  
**Energy Poverty**  
Advisory Hub

# Covenant of Mayors (CoM) initiative



In the EU, there are over 10,000 CoM municipalities and over 6,000 with action plans presented – SEAP/SECAP. In Italy, the percentage of signatory municipalities is about 58%.

→ Municipalities' ambition to invest in energy planning.

The percentage of Italian signatories who have submitted the action plans is about 81%; the percentage of Italian signatories who have produced monitoring reports is about 21%.

→ Progress of the monitoring phase rather low.

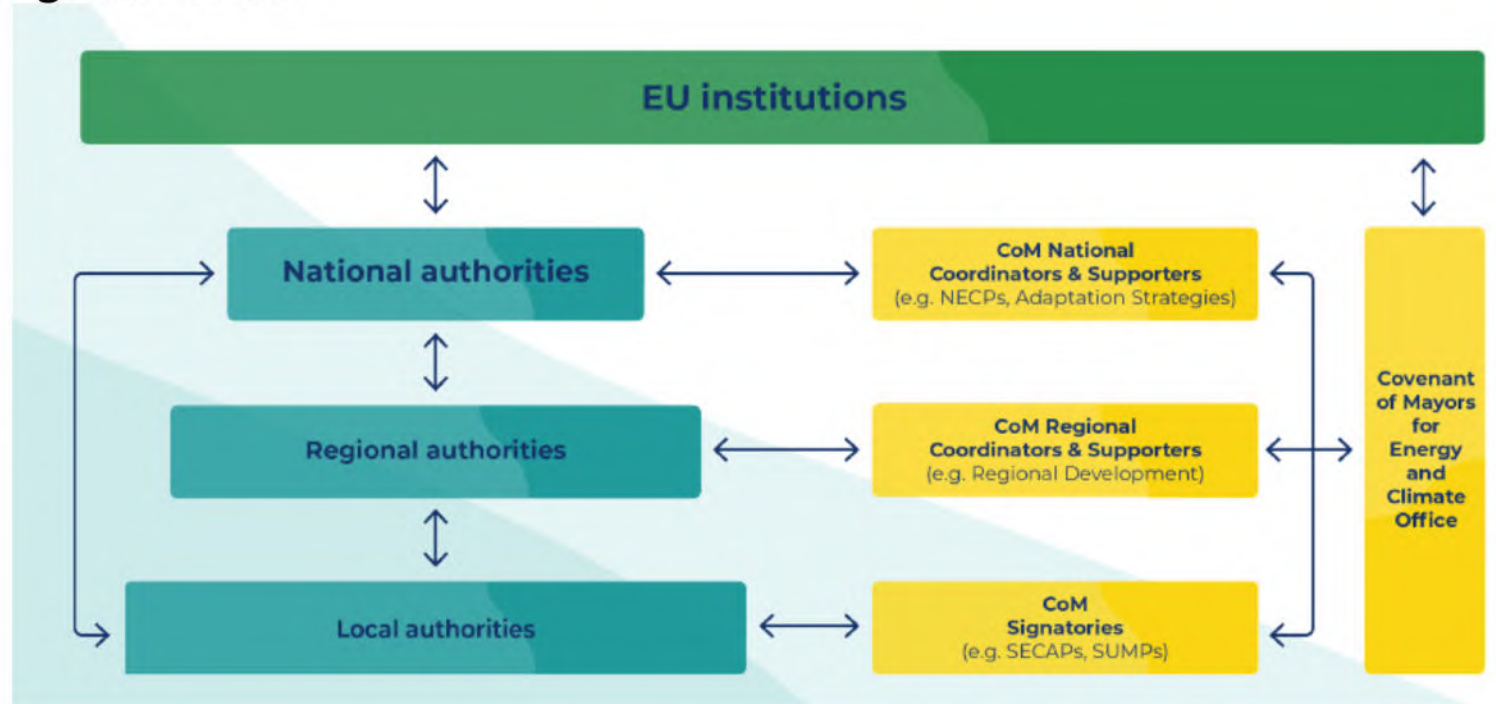
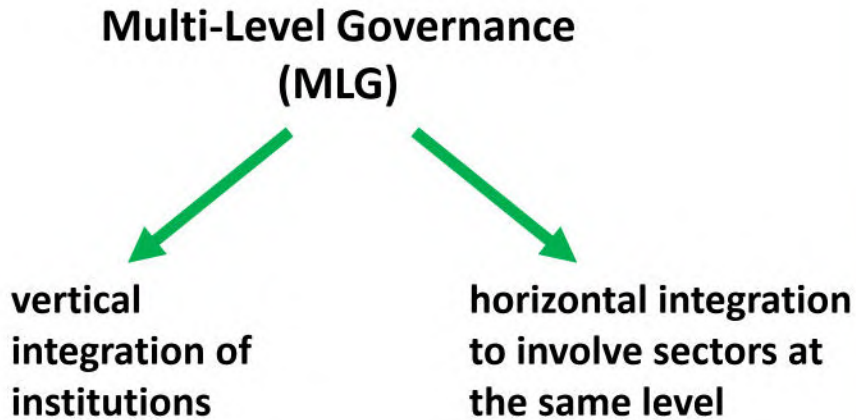
→ The plans were not translated into numbers and the advances were not recorded.



# Covenant of Mayors (CoM) initiative



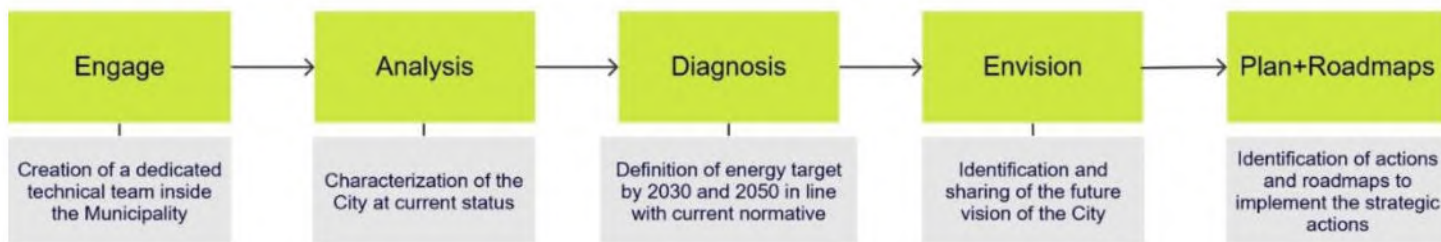
The Covenant of Mayors' engagement approach is based on Multi-Level Governance (MLG) to improve decision-making processes at all levels of governance.



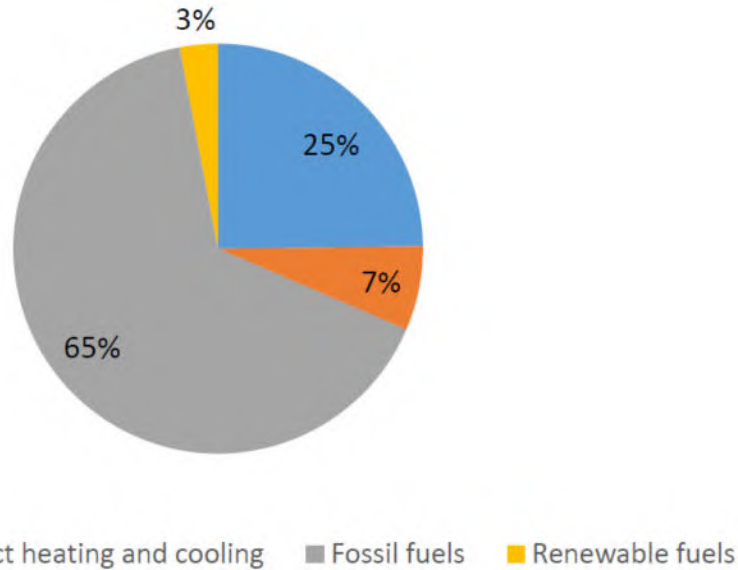


# Integrated Energy and Climate Plans (es. SECAP)

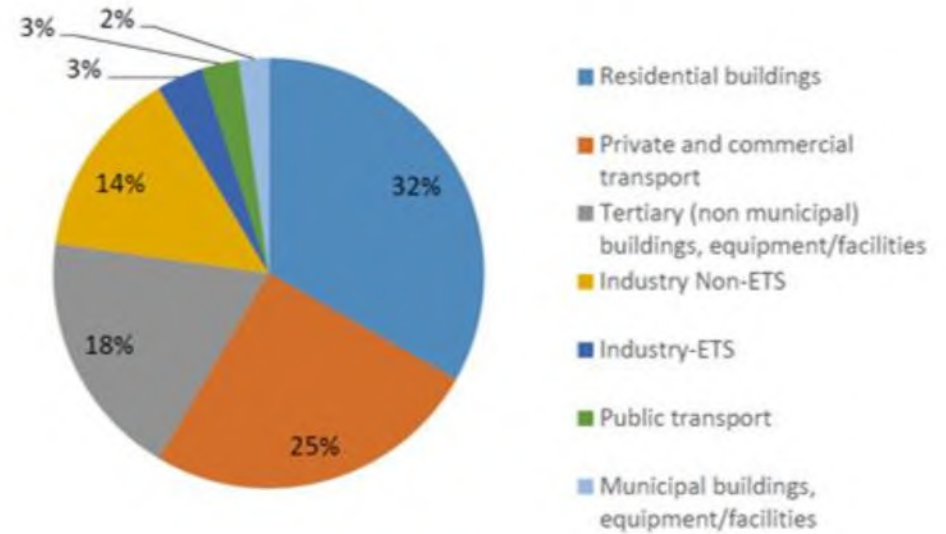
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# Integrated energy and climate plans



Fossil fuels have the largest weight with 65%, followed by electricity with 25%, district heating and cooling with 7% and renewable sources with the lowest percentage of 3%.



(Source: JRC elaboration based on GCoM data, 2022)

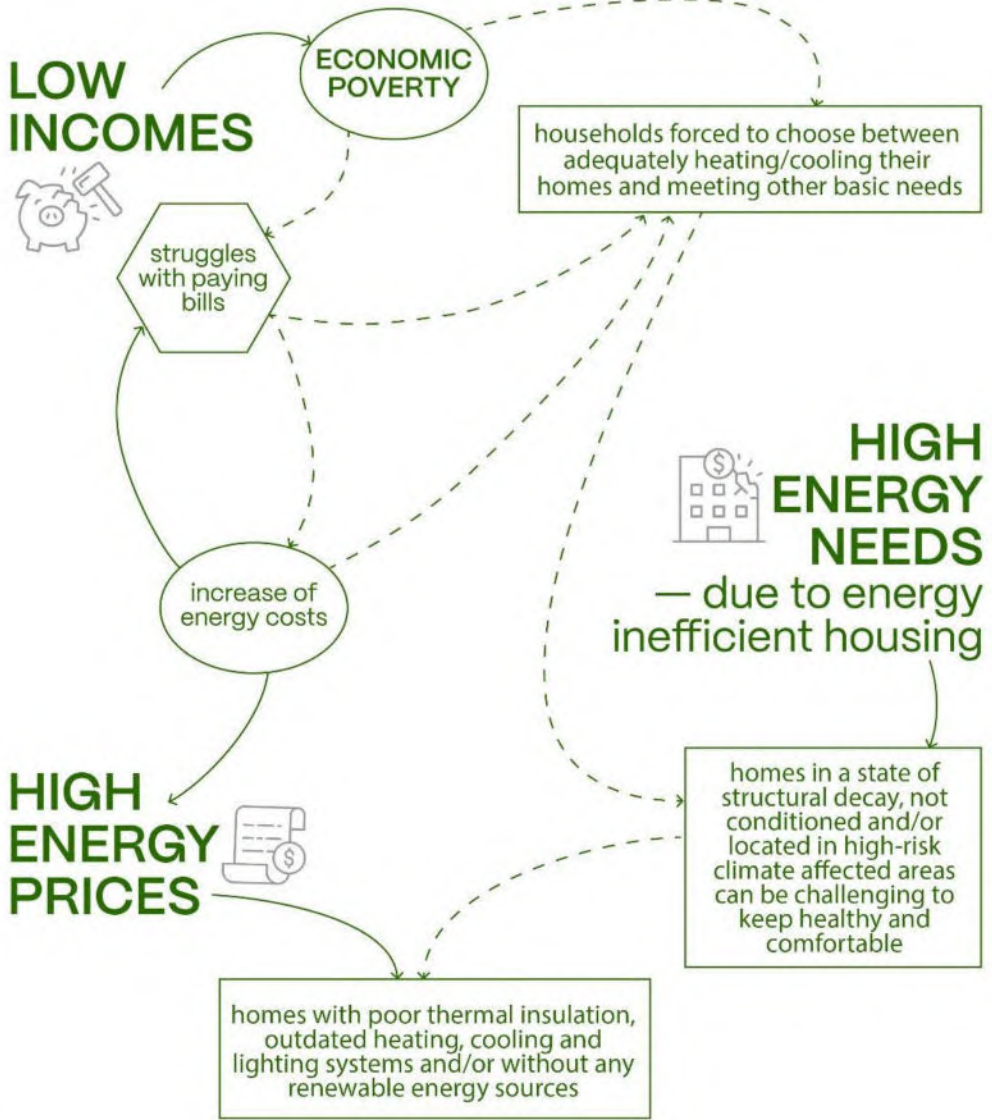
The sector with the highest energy consumption is residential construction with 32%, followed by private and commercial transport with 25%. The public building sector accounts for 2% of the total share of energy consumption.



# Energy Poverty – EPAH

**ENERGY POVERTY = INABILITY OF CITIZENS TO ACCESS ESSENTIAL ENERGY SERVICES.**  
 It is caused by the interaction of three main factors:

- Low income
- Not energy-efficient buildings
- High energy costs





# Renewable Energy Communities - REC

Citizen participation in CERs can be considered one of the highest expressions of energy citizenship, underlining the active role of citizens in the energy transition process.

The social objectives of an energy community are:

- Making families and citizens protagonists of the energy transition;
- Reduce energy costs for households and citizens;
- Promote the rational use of energy;
- Build useful relationships between stakeholders (Municipality, citizens, businesses, etc.);
- Prioritise local resources, also to increase job opportunities;
- Involve local communities and associations for inclusion goals.



**Empowering communities and capacity building on energy poverty at Lumiar**

**Collaboration between**

Lumiar Civil Parish  
Local Partnership of Telheiras

**Energy poverty phase**

 **Diagnosis**  **Planning**

Example: REC in Telheiras  
(Lisbon, Portugal)

# Community Transition Pathways (CTP)



ALMA MATER STUDIORUM  
UNIVERSITÀ DI BOLOGNA



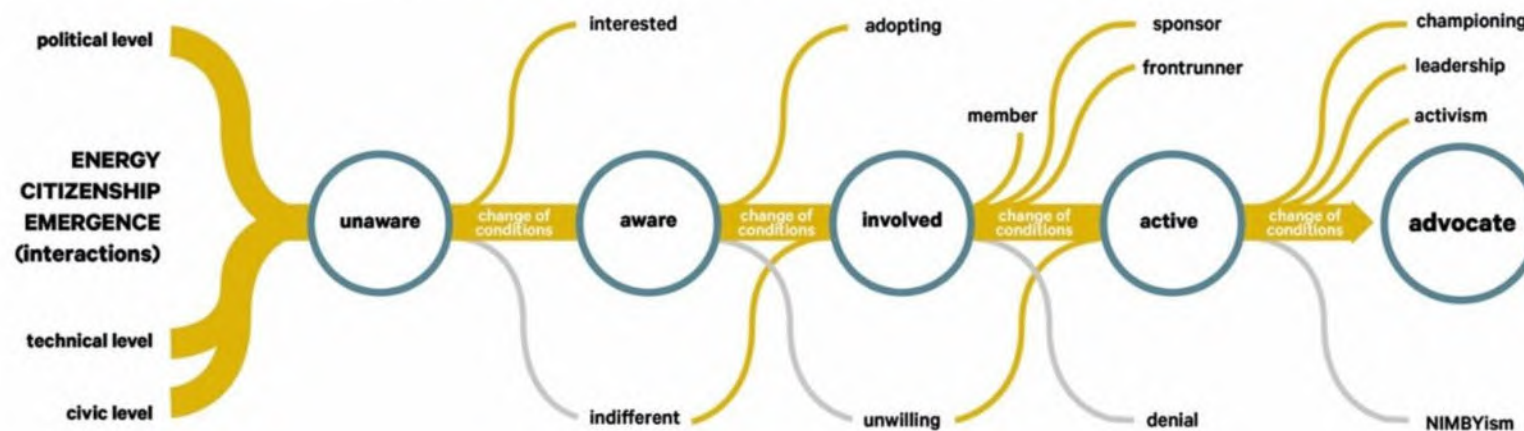
Technology and Resilience in Architecture Construction and Environment  
**TRACE** team

Energy citizenship means active public participation towards a greener future.

People and communities are not only driven by top-down policies, but they must be able to find ways of acting that are motivating for them and that fit their circumstances.

The aim of the H2020 GRETA project was to better understand what influences people's willingness and abilities to act and the barriers that hinder it.

Community Transition Pathways (CTP): pathways for individual and community transition.



<https://cordis.europa.eu/article/id/450492-citizen-engagement-for-affordable-and-sustainable-energy-solutions>



# Awareness-raising and citizen involvement actions



Case study of the GRETA project: area of Bologna called Roveri-Pilastro of about 400 hectares. It has been a place of experimentation of Community Transition Pathways (CTPs).

Main actions taken to raise awareness and involve citizens in the context of CTPs:

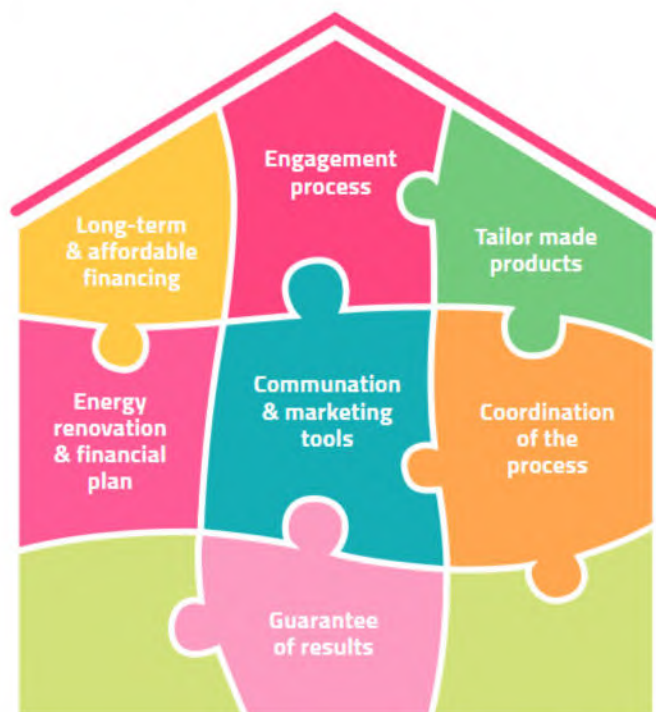
- Interviews and questionnaires
- Workshops with local associations
- Social Innovation Labs

The main challenges identified are:

- Importance of communication in different cultural contexts and demographics.
- Complexity of energy and climate issues that increases community distrust.
- Difficulty interacting with neighborhood structures that create constraints in decision-making.



# One-Stop-Shops for the energy upgrading of buildings - OSS



One-Stop-Shop (OSS) is considered the virtual or physical place where homeowners can find all the information to develop a building renovation project.

It fosters a movement of people united around a common cause and taking individual action to build a more sustainable community.

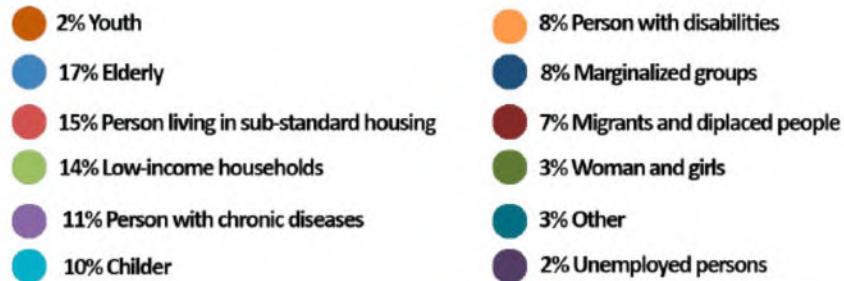
# The energy poverty pillar in energy plans

Main aspects to be considered in the integration of the energy poverty pillar into urban energy and climate planning activities, such as the development of SECAPs:

- to identify vulnerable people and consumers;
- to establish indicators to diagnose and monitor the phenomenon of energy poverty;
- to make the involvement of citizens in the plan actions central.



# Vulnerability and climate change



(Source: JRC elaboration based on GCoM data, 2022)

Around 6600 vulnerable groups of people are exposed to climate risks:

- Elderly; people living with chronic diseases; children vulnerable to extreme heat;
- People living in substandard housing vulnerable to heavy rainfall;
- Low-income households vulnerable to extreme heat/cold, flooding, and sea level rise;
- Energy poverty affects women who are most vulnerable to extreme cold.



# Energy poverty indicators

EPAH Indicators



Covenant of Mayors indicators

The macro-areas of indicators identified are:

CLIMATE

RESIDENTIAL BUILDINGS

MOBILITY

SOCIO-ECONOMIC ASPECTS

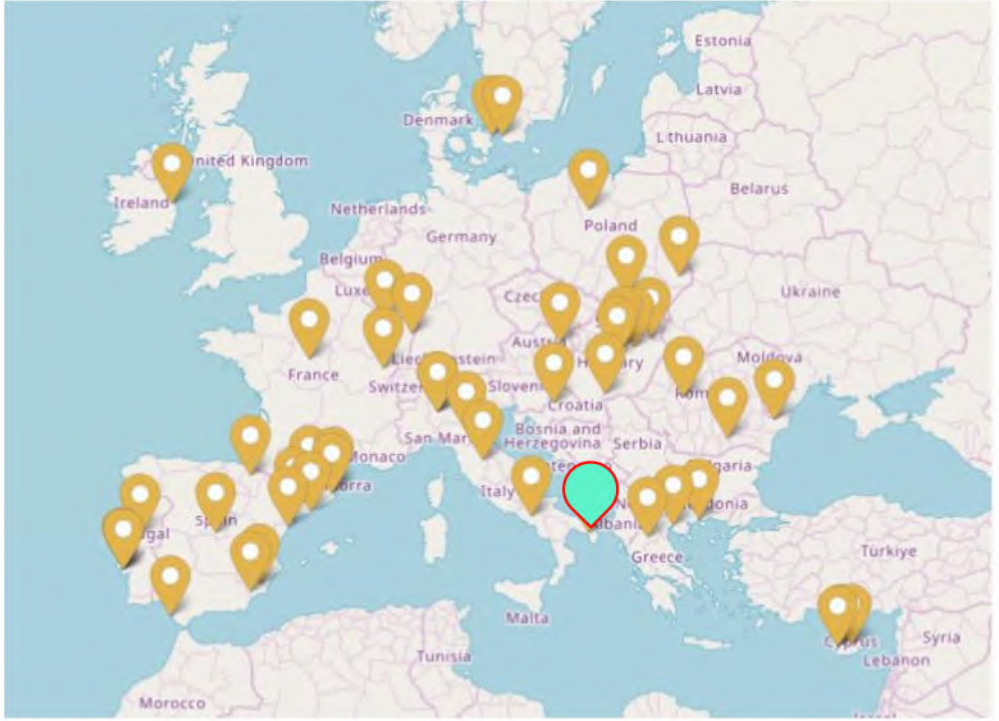
REGULATIONS

PARTICIPATION AND INVOLVEMENT

Defining the impact of actions on climate mitigation, adaptation and energy poverty



Energy Poverty Assessment - CoM		
Macro-area	Used indicator(s)	Unit
Climate	Frequency of heat waves	Days per year
	Frequency of cold waves	Days per year
	Number of heating degree days per year	HDD + CDD / year
	Number of cooling degree days per year	HDD + CDD / year
Facilities / housing	F+G+H band (EPC) dwelling/total number of dwelling	[%]
	Energy consumption (electricity + heating) per capita / national energy consumption (electricity + heating) per capita	[%]
	Share of buildings renovated per year	[%]
	Share of households or persons with presence of leak, damp, rot in their dwelling / total households or persons	[%]
	Percentage of households or persons within the municipality experiencing heating discomfort / total households or population	[%]
	Percentage of households or persons within the municipality experiencing cooling discomfort / total households or population	[%]
	Households or persons connected to the electricity grid / total households or persons	[%]
	Households or persons connected to the gas grid / total households or persons	[%]
Mobility	Population or households not having access to essential services within 1 hour by walking, cycling or public transport / total population or households	[%]
	Persons or households living more than one km from nearest public transport station / number of persons or households	[%]
Socio - economic	Percentage of population or households spending up to XX % of their income on energy services	[%]
	Vulnerable households or persons / total households or persons	[%]
	Arrears on utility bills / total population or households	[%]
	Inability to keep home adequately warm	[%]
	Inability to keep home adequately cool	[%]
High share of energy expenditure in income (2M)	[%]	



The Municipality of Leverano is one of the Italian municipalities awarded the second call for technical assistance from the European Commission's Energy Poverty Advisory Hub (EPAH), launched in September 2023 and finalized in July 2024.

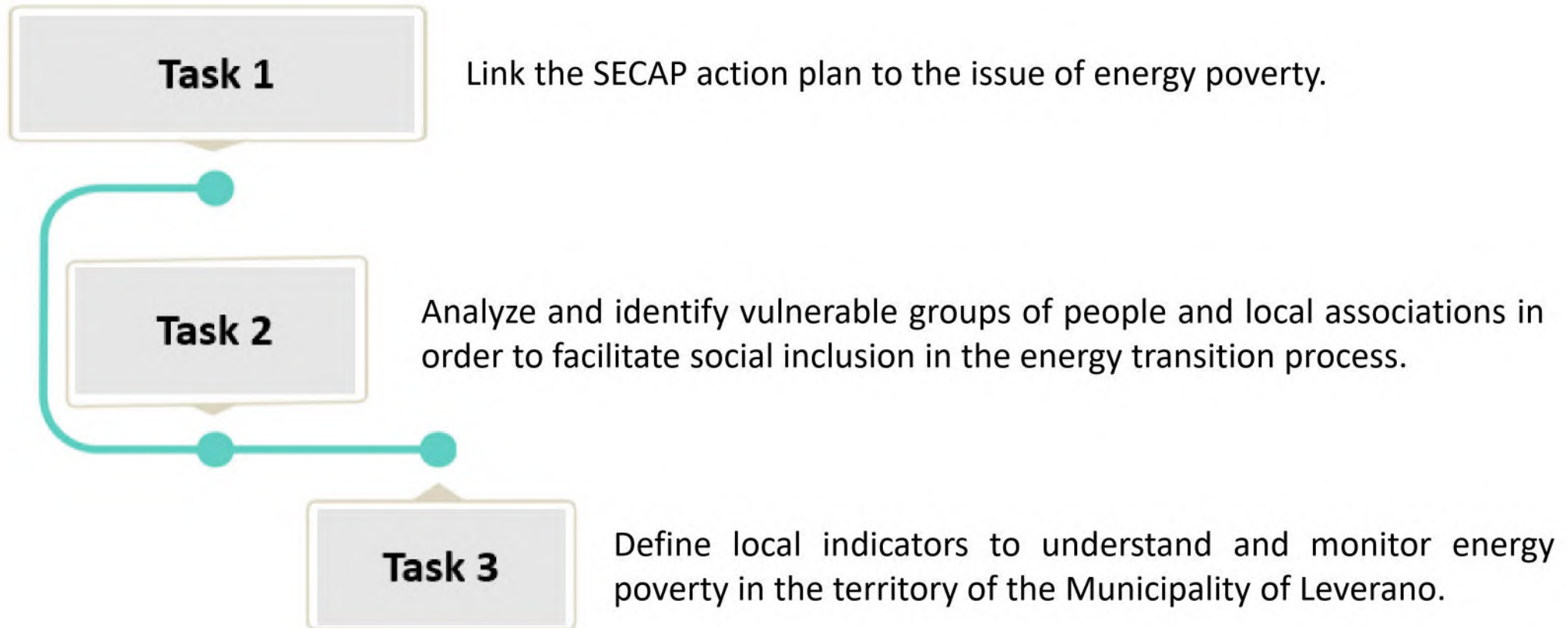
The project aimed to understand the phenomenon of energy poverty and support the Municipality of Leverano in developing strategies to combat it.

The project is integrated with the activities that are being carried out for the development of the Sustainable Energy and Climate Action Plan – SECAP with the aim of reducing CO2 emissions by 55% by 2030. It includes a multi-sector work team.





**Research area for which the Municipality of Leverano has been selected: DIAGNOSIS OF THE PHENOMENON OF ENERGY POVERTY**





- Leverano has been involved in national and European events for the sharing of best practices;
- Participatory local events with citizens were organized;
- A participatory questionnaire was used for data collection in order to understand the extent of energy poverty;
- Case of Leverano in the EPAH Digital Academy <https://www.youtube.com/watch?v=ur0LtEiEpmk>.

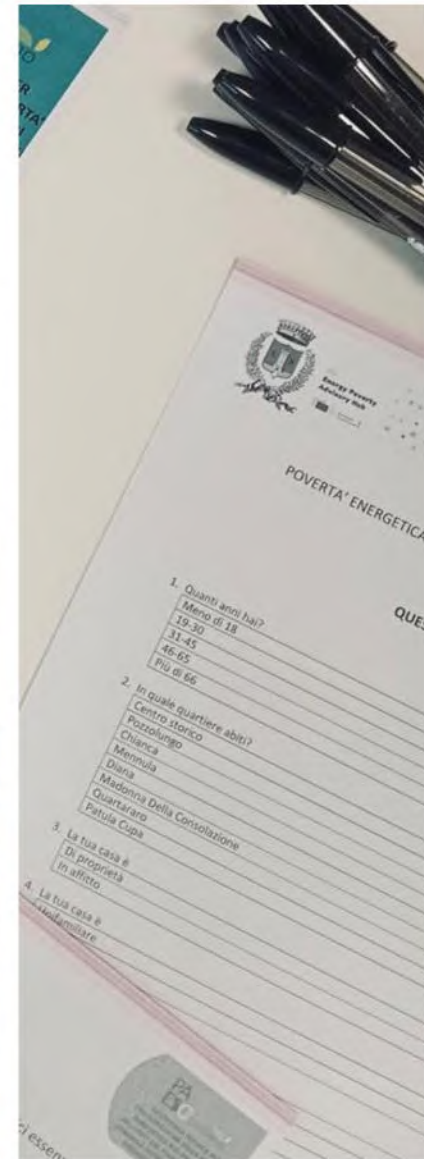


Energy Poverty Advisory Hub International Conference  
 15-16/10  
 TURNING THE TIDE: PAVING THE WAY FOR ENERGY POVERTY ALLEVIATION

**Energy Poverty Advisory Hub**  
 Annual Conference  
 19-20 September 2023, Warsaw Poland



Workshop «EU Energy Policy and Recent Efficiency Directive Developments» - Eng. Serena Pagliula



EU Energy Poverty Advisory Hub  
 PA ESCO Leverano  
 ASSISTENZA TECNICA PER L'INTEGRAZIONE DELLA POVERTA' ENERGETICA NEL PROCESSO DI SVILUPPO DEL PIANO D'AZIONE PER L'ENERGIA SOSTENIBILE ED IL CLIMA (PROGETTO N. TA2023/72)

**POVERTA' ENERGETICA**  
 La difficoltà di usufruire dei servizi energetici essenziali

L'evento, organizzato dall'Amministrazione Comunale con i settori LL.PP e Servizi Sociali e con l'assistenza tecnica dello Studio Pagliula Associato, ha lo scopo di sensibilizzare e coinvolgere le associazioni locali e i cittadini sul tema del contrasto alla povertà energetica nel territorio comunale. Sarà divulgato un questionario sul benessere percepito dai cittadini all'interno delle proprie abitazioni.

**Giovedì 4 Luglio h 19:00**  
 Laboratorio sociale Via Turati n. 5 Leverano

Interverranno:  
**Marcello Rolli**, Sindaco del Comune di Leverano  
**Ines Serena Cagnazzo**, Assessore per le Politiche e Servizi Sociali  
**Martina Zecca**, Presidente del Consiglio Comunale  
**Studio Pagliula Associato**, Assistenza tecnica EPAH



# Considerations

- Integrated energy plans serve as **governance tools for policy makers**, as they have the following main characteristics:
  - Flexibility: they are adaptable and include multiple pillars, such as mitigation, adaptation and the fight against energy poverty.
  - Predictiveness: they allow decision-makers to imagine a new urban environment and a new vision of a sustainable city over short, medium and long-term horizons.
  - Compatibility and upgradeability: they align and are upgradeable to accommodate new multi-level policies and initiatives (urban, regional, national and European).
- **Energy communities are one of the most effective solutions in Europe to:** mitigate CO2 emissions and adapt buildings to climate change using locally produced renewable sources and reduce the phenomenon of energy poverty by actively involving citizens.
- **The combination of technologies and engineering, architectural and social skills** can support the city, or part of it, to achieve climate neutrality by promoting **paths for individual and community transition**.

# Limitations

- **Limited maturity of the policy framework** considering the recent incorporation of the energy poverty pillar.
- **Request for a multilevel approach by political decision-makers** for the effective fight against energy poverty and the implementation of energy communities.
- **Inadequacy/absence of open access databases** emerged from the impossibility of defining a series of EPAH and CoM indicators and the poor progress of SECAP monitoring.
- **Inequality between EU Member States extends to significant differences in access to data**, which at the same time creates a lack of homogeneity in data sources for the development of SECAPs.

Addressing these limitations is crucial to promoting a more solid and equitable basis for energy planning and implementing climate action.





**THANK YOU FOR YOUR ATTENTION!**

Ing. Serena Pagliula, PhD

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Studio Pagliula Associato



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