

# SUPER\*i

# D4.3 Reports on Webinars for Three Countries

Author: Rasmus LT Hedegaard Contributions From: Flaminia Rocca, Nina Peçar, Jonas A. Johansen, Paola Zerilli, Riccardo Coletta and Ahmed Djeddi

Super-i

WP4: Replication at EU level and Capacity Building





# **Technical References**

Project Acronym	SUPER-i
Project Title	Extended Public-Private Partnership for Investment in Smart
	Energy Efficiency Projects in a Social Housing context
Project Duration	September 2022 - August 2024

Deliverable No.	D4.3
Dissemination level*	PU
Work Package	WP4 - Replication at EU level and Capacity Building
Task	T4.3 - Carrying out webinar capacity building sessions for key
	stakeholders in 3 EU partner countries
Lead beneficiary	7 (EGC)
Contributing beneficiaries	12 (HFROS), 3 (APRE)
Due date of deliverable	30 April 2024
Actual submission date	April 2024

\* PU = Public

PP = Restricted to other programme participants (including the Commission Services)

RE = Restricted to a group specified by the consortium (including the Commission Services)

CO = Confidential, only for members of the consortium (including the Commission Services)

v	Date	Beneficiaries	Track changes
0.1	08/04/2024	Rasmus LT Hedegaard, EGC	First draft
0.2	14/04/2024	Nina Peçar, Jonas A. Johansen, Flaminia Rocca	Inputs from all partners
1.0	22/04/2024	Rasmus LT Hedegaard, EGC	Ready for internal review
1.1	25/04/2024	Paola Zerilli, Ahmed Djeddi (UoY)	First review
1.2	29/04/2024	Paola Zerilli (UoY) Riccardo Coletta (APRE)	Final review



# **Table of Contents**

1.	Executive Summary	6
2.	Introduction	8
3.	Report on Webinar in Italy	9
3.2 3.3	3.1. General Information on the Webinar	11 15
4.	Report on Webinar in Slovenia	21
4.2 4.3	I.1. General Information on the Webinar	23 24
5.	Report on Webinar in Denmark	29
5.2 5.3	General Information on the Webinar	32 35
6. (	Conclusion on Webinars	39
7. /	Annex	42
7.2	7.1. Capacity Building Webinar in Italy	47



# **Abbreviations**

DHW Domestic Hot Water

EE Energy Efficient

**EPC** Energy Performance Contract

ESCO Energy Service Company

IEE Intelligent Energy Europe programme

PPP Public-Private Partnerships

PV Photovoltaic

REC Renewable Energy Communities

RES Renewable Energy Sources

SHM Social Housing Managers

SME Small and Medium-Sized Enterprises

SHO Social Housing Organisations

VRV Variable Refrigerant Volume



# 1. Executive Summary

This report summarises the insights gathered from three capacity building webinars focusing on energy efficiency and sustainability in residential buildings. Conducted within the framework of the Horizon Europe project SUPER-i, these webinars took place in Italy, Slovenia, and Denmark. SUPER-i, spanning a three-year duration, is dedicated to identifying financially and environmentally sustainable approaches to energy refurbishment in social housing.

The webinars held in Italy, Slovenia, and Denmark served as capacity building platforms to shed light on the challenges and opportunities inherent in promoting energy efficiency and sustainability across residential buildings in Europe. The webinars underscored the importance of collaborative approaches, innovative financing mechanisms, and community engagement in advancing energy efficiency and sustainability goals across Europe's residential sector. Presented below is a list of key findings and actionable insights garnered from each capacity building webinar.

# **Webinar in Italy**

- Emphasis on energy-saving practices, efficiency measures, and renewable energy integration in residential buildings.
- Discussion on legislative mandates for integrating renewable energy sources (RES) and ventilation strategies to mitigate heat loss.
- Recognition of the three dimensions of social acceptance and the benefits of renewable energy communities (RECs) in fostering democratic energy transitions.
- Highlight on the operational proposal for energy-efficient (EE) renovation of social housing through public-private partnerships (PPP) and contractual structures.
- Exploration of European funding opportunities in Horizon Europe Cluster 5 and the Built4People partnership's relevance to social housing and energy efficiency initiatives.

# Webinar in Slovenia

- Identification of challenges in energy renovations, including limited motivation for investment and financial constraints.
- Highlight on the importance of tenant education, promoting energy renovations, and addressing fragmented ownership structures.
- Recognition of the crucial role of collaborative efforts, innovative financing strategies, and community engagement in overcoming barriers.
- Emphasis on the significance of regulatory and technical improvements to facilitate the adoption of energy-efficient technologies.

### **Capacity Building in Denmark**

- Recognition of legal complexities, extended payback periods, and insufficient grants as challenges in energy renovations.
- Importance of collaborative efforts with the private sector, innovative financing strategies, and community engagement in driving progress.
- Discussion on the role of financial models like energy service companies (ESCOs) and the significance of clear communication and targeted awareness campaigns.



Emphasis on streamlining regulatory processes and updating standards to address technical barriers. **SUPER** • i



# 2. Introduction

This report presents the findings from webinars conducted in the three SUPER-i pilot countries: Italy, Slovenia, and Denmark. These webinars were part of the replication and capacity building efforts within the SUPER-i project.

Each webinar, tailored to its respective national context, aimed to enhance the capacity of key stakeholders involved in sustainable urban planning. Held primarily in local languages, the webinars served as part of the capacity building programme outlined in previous deliverables, including D4.1 SUPER-i Capacity Building Programme Including Webinar Model and D4.2 Database of Key Stakeholders in 6 EU Countries.

The objective of this report is to draw analytical conclusions based on individual reports from the three webinars. Each pilot country provided detailed information on various parameters by completing a template report. These reports covered essential aspects such as speakers, participants, co-organisers, as well as the topics, key insights, and challenges discussed during the webinars. Additionally, contextual information about the stakeholders involved in speaking, organising, or participating was provided to offer readers a clearer understanding of the discussions.

The subsequent chapters of this report present the individual reports from the capacity building webinars held in Italy, Slovenia, and Denmark. Following this, a concise conclusion will highlight key insights and barriers identified during the webinars. This discussion aims to enhance the replicability of SUPER-i results on a broader EU level, as the three pilot countries represent diverse contexts from Northern, Southern, and Eastern Europe. Furthermore, supplementary materials from the webinars, such as invitations and agendas, are included in the Annex. These materials offer readers insights and examples from our case studies, providing inspiration for those interested in replicating the SUPER-i solutions.



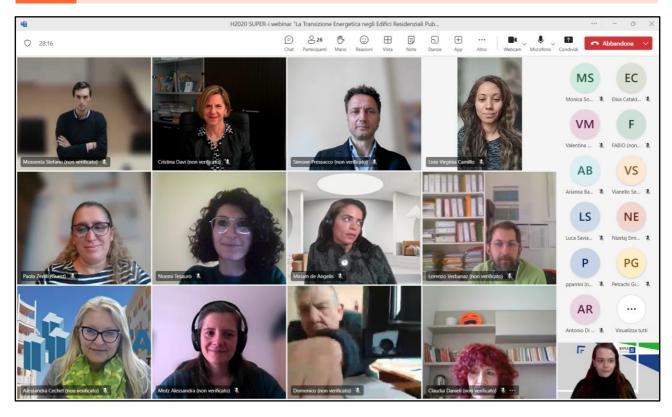
# 3. Report on Webinar in Italy

# **3.1.** General Information on the Webinar

Date and time	25th March 2024 15.00 – 17.30.		
Target group level (Local, regional or national)	National with a focus on the Friuli-Venezia Giulia Region		
Topic of webinar	The Energy Transition in Social Residential Buildings		
Participants			
Total number of participants	43		
SHOs	11		
Policy	10		
Academia	10		
ESCOs	6		
Financial Institutions	3		
SMEs	2		
Civil Society	1		



Agenda			
15.00	Introduction to the webinar Prof. Paola Zerilli, University of York, Coordinator of the SUPER-i project; Riccardo Coletta, APRE, Agency for the Promotion of European Research		
15.15	Energy efficiency in residential buildings Stefano Mossenta – Casa Clima Certifier - APE FVG (Agency for the Energy of FVG)		
15.45	Social acceptance of the energy transition (poverty energy/CER)  Alessandra Motz – Researcher at the institute of economic research, University of Italian  Switzerland (USI) of Lugano		
16.15	Case study: ERP energy efficiency (Residential buildings public) Simone Pressacco, ATER Trieste; Paolo Parrini, Studio Pozzoli		
16.45	European funding for the energy transition Miriam de Angelis, Horizon Europe National Contact Point & Competence Team 'Climate, Energy and Mobility', APRE – Agency for the Promotion of Research European Noemi Tesauro, Horizon Europe Competence Team 'Climate, Energy and Mobility', APRE – Agency for the Promotion of European Research		
17.10	Q&A		



Screenshot from the Italian Capacity Building Webinar

# 3.1.1. Introduction of Speakers



#### Prof. Paola Zerilli

University of York, Economics Department (SUPER-I coordinator & SUPERSHINE Scientific Coordinator), financial modelling expert, specialised in Sustainable Finance and Energy Poverty.

#### Dr. Stefano Mossenta

"CasaClima" (Italian protocol "Home & Environment") Certifier - APE FVG — Agency for the Energy of the Friuli Venezia Giulia Region (where Italian pilot Trieste is located), the only agency in the area created under the specific Intelligent Energy Europe programme (IEE) with the aim of promoting energy saving and the use of renewable energy.

#### Dr. Alessandra Motz

Postdoctoral researcher in Economic Sociology at the Swiss Italian University of Lugano, expert in energy poverty and social acceptance (both from the citizens and the market) for renewable energy sources (RES).

## **Eng. Simone Pressacco**

ATER Trieste (SUPER-i partner), Technical Area Management Officer and Social Housing Manager (SHM).

#### Dr. Paolo Parrini

Pozzoli Firm, technical consultant in energy efficiency for social housing, public-private partnership (PPP) expert.

#### Miriam de Angelis

Horizon Europe National Contact Point & Competence Team 'Climate, Energy and Mobility", APRE.

#### Noemi Tesauro

Horizon Europe Competence Team 'Climate, Energy and Mobility', APRE.

# 3.2. Summary of Discussed Topics

The Italian capacity building webinar delved into crucial aspects of EE and sustainability within residential buildings, focusing particularly on social housing. With speakers, including Stefano Mossenta from Casa Clima, Alessandra Motz from the University of Lugano, Simone Pressacco from ATER Trieste, Dr. Paolo Parrini from Pozzoli Firm, and Miriam de Angelis and Noemi Tesauro from APRE, discussions shed light on various challenges and opportunities in this domain.

Speakers elaborated on tackling obstacles such as social acceptance of the energy transition and navigating complex bureaucratic processes. Solutions such as PPP for renovation endeavours were explored, emphasising the need for community involvement and innovative financing mechanisms.

The webinar also highlighted avenues for accessing European funding, particularly within Cluster 5 of Horizon Europe, to bolster sustainable building practices. By fostering dialogue and sharing insights, the webinar aimed to support stakeholders towards fostering a more energy-efficient and sustainable residential sector.



# 3.2.1. Energy efficiency in residential buildings, with a focus on social housing

The intervention of APE FVG, i.e. the Energy Agency of the Friuli Venezia Giulia Region (where the Italian pilot is located, i.e. the city of Trieste) initially introduced the role of the agencies created under the specific IEE with the aim of promoting energy saving and the use of renewable energy. APE FVG is the only IEE agency in the Friuli Venezia Giulia Region, therefore the only reference in the area for energy-related dialogue with the European Commission. Furthermore, it is the reference for the certification process of buildings according to the "CasaClima" (Climate & Buildings) protocol in the Region.

Three key concepts that the APE promotes are energy saving, energy efficiency and renewable sources. Energy saving is the set of all those practices aimed at reducing electricity consumption and, at reducing the pollution necessary for its production. This translates into a more rational use of energy. Subsequently, the intervention moved on to a comparison between a traditional building and one undergoing renovation aimed at energy efficiency: a traditional building is typically made up of a reinforced concrete door structure and brick wall infill. Before 1976, in Italy the buildings were not equipped with insulating material (load-bearing masonry, air cavity, masonry for systems), while, from '76 onwards, with the first energy laws, the air cavity began to be insulated with 4-5 cm of insulation. Energy consumption is broken down as a consequence. Consumption for heating and cooling has the greatest impact on costs (72%), followed by hot water (14%), the use of household appliances (12%) and lighting (2%).

The reduction of energy requirements (and, therefore, of the related costs) to maintain a comfortable temperature inside the building is inextricably linked to the improvement of the traditional building envelopes, reducing heat dispersion and waste through better insulation.

In Italy, starting from Legislative Decree 28/2011, it was already established that 50% of the energy needs for the production of domestic hot water (DHW) and DHW + Heating + Cooling should be covered by renewable sources.

In buildings, ventilation is necessary for sanitary reasons, but it causes heat losses: nevertheless, if architects and engineers intervene on the building's energy efficiency starting from the design phase, an already airtight envelope could be inserted. Otherwise, an intervention to improve the airtightness is necessary. Furthermore, through the installation of a heat recuperator on existing Air Handling Unit or Controlled Mechanical Ventilation, the ventilation losses are partially compensated. It is also fundamental to provide for interventions that affect the transmittance of surfaces, such as external insulation or internal false wall, attic insulation (also towards non-return valve or crawl space) and roof insulation.

In conclusion, APE FVG suggested some effective interventions to reduce energy costs both in the short and the long run, in order to tackle energy poverty on a permanent perspective: the replacement of lamps with LED systems, the redevelopment of the lighting system and the photovoltaic (PV) installation.

# 3.2.2. The social acceptance of the energy transition (with focus on energy poverty and Renewable Energy Communities)

In the perspective of research centres that study the energy transition from the perspective of Economic Sociology, social acceptance is a phenomenon that must be considered from three points of view: Socio-political acceptance, that of the communities, and finally that of the market. Socio-



political acceptance, which mainly concerns policy makers but also lobbyists, refers to innovative technologies and related policies. Acceptance by the communities passes through three factors: Trust regarding the effectiveness of the benefits promised by the RES, procedural justice and distributional justice. Market acceptance involves investors, but also citizens as consumers and end users, as well as intra-firms. Procedural justice includes the public's need for transparency and codecision.

The analysis of factors that influence social acceptance should also include the role of behavioural (observable) and attitudinal (not directly observable) elements. Examples of those elements are: the role of «peers», the environmental sensitivity and misconceptions about technology, the role of a "conservative" attitude and the fear of nuclear power. The fact that attitudes are closely linked to the context and evolve over time should not be ignored.

Renewable Energy Communities' (REC) benefits have then been analysed. For the environmental benefits, more renewable electricity, additional use of land already consumed, diffusion of good practices are some of the elements included in the overview. For the economic benefits, the fact that the State pays an incentive for "shared energy" in RECs has been mentioned. As the main social benefits, it was pointed out that the community democratically decides how to use the incentive, and no one is left behind, contributing to an increased sense of belonging for the community.

# **3.2.3.** Operational Proposal for Energy Efficient Renovation of Social Housing Buildings through PPP

The Social Housing Managers (SHM) of ATER Trieste presented their operational proposal structured through the form of PPP and aimed at energy efficiency and seismic improvement of some buildings managed by them, in order to discuss it as best practice with their colleagues from other social housing associations present during the webinar.

Some of the tenants have stimulated ATER in order to invest in the extraordinary maintenance of the assets by taking advantage of the tax benefits of the 110% Super bonus.

To prepare the proposal, ATER took into account the reports received from the tenants (participatory approach), together with considerations of a purely technical nature (age of the buildings, maintenance needs, energy needs, technical feasibility); then, it drew up an initial list of buildings to be proposed to the various companies or "general contractors" involved in order to develop interventions taking advantage of the Italian incentive "110% Super bonus".

Two companies have started a feasibility project to support a P.P.P. hypothesis. in complexes entirely owned by ATER (for now only one dossier has been presented). Other companies have started feasibility planning in mixed-ownership complexes (no proposal has been materialised at this time).

In some small condominiums, some administrators have already undertaken renovation work by activating Super bonus (Italian Law 17.07.2020 No. 77) or Facade Bonus procedures.

In summary, the energy efficiency intervention concerned by ATER proposal (DRIVING INTERVENTIONS) has been:

- Thermal insulation of dispersing surfaces;
- The replacement of existing thermal generation systems (high temperature blown burner boilers in Thermal Power Plant + electric boilers for the production of DHW inside the



housing units, with new variable refrigerant volume (VRV) (which means hot and cold) air conditioning system + new DHW production system high temperature CO2 heat pump with Thermal Power Plant storage;

- The installation of a new DHW production system with new three-pipe distribution (cold water, hot water and recirculation);
- The replacement of the heat accounting system and installation of a Domestic Hot and Cold Water consumption accounting system;
- The installation of new emission systems (split systems) in the various residential units.

In summary, the seismic improvement intervention concerns:

- The creation of a seismic coat;
- The creation of a system of confinement of the beam-pillar nodes to reduce displacements, creation of a steel frame with sheet metal plate chain for the parts of the elevator shafts;
- The installation of a structural monitoring system with sensors that will allow remote control of the global behaviour and of the individual elements of the structural body.

# **3.2.4.** Exploring European Funding Calls for Energy Efficiency and for Combatting Energy Poverty

The APRE-led project "GREENET" is the European network of the Horizon Europe CL5 "Climate, Energy and Mobility" National Contact Points. The aim is to improve the professionalisation of the CL5 NCPs across Europe, simplifying applicants' access to Horizon Europe calls and raising the average quality of submitted proposals:

- Raising the general standard of support to applicants by enhancing the competences of the Cluster 5 NCPs.
- Raising applicants' awareness on HE funding opportunities as well as their knowledge by the provision of a suite of tools to better tackle the challenges posed by the CL5 of HE.
- Lowering the entry barriers for newcomers and participants from widening countries.
- Increasing the quality and inclusiveness of international consortiums supporting matchmaking among the CL5 applicants.

In general, Horizon Europe Cluster 5, dedicated to Climate, Energy and Mobility, aims at fighting climate change by better understanding its causes, evolution, risks, impacts and opportunities, and by making the energy and transport sectors climate neutral, environment-friendly, efficient, competitive, smarter, safer, resilient and useful for citizens and society.

Cluster 5 supports the EU's strategic objectives through activities included in the work programme (incl. Co-Programmed Partnerships) and through the support of Institutional European Partnerships which are implemented through dedicated structures. R&I activities under CL5 will contribute to the objectives of the <u>European Green Deal</u> related to the <u>Climate Pact</u>, the <u>Clean energy strategy</u>,; <u>Strategic Energy Technology (SET) Plan</u>, the <u>Strategic Transport Research and Innovation Agenda (STRIA)</u>, European Circular Economy Action Plan.

In the aftermath, the European Policy priorities for Energy have been highlighted:

- REPowerEU.
- EU Strategy for Energy System Integration.
- Hydrogen Strategy.
- Renovation Wave for Europe.
- Offshore Renewable Energy.



To contribute to RePowerEU, CL5 Work Programme for 2023-2024 has a threefold approach, covering the need for energy saving combined with energy efficiency, the instance for diversifying energy supplies and to accelerate the roll-out of RES. The energy related calls have therefore been designed to have as outcomes:

- More energy efficient (EE) building stocks;
- Increased energy efficiency in both industry and the residential compounds;
- Maturing hydrogen-based solutions;
- Cheaper and more performant renewable energy technologies (solar, wind, ocean, geothermal, hydro energies, renewables fuels, heat pumps, solar heating);
- More flexible and resilient energy grids;
- Better and smarter energy storage solutions.

In particular, the energy-related destinations were analysed:

- Destination 3 Sustainable, secure and competitive energy supply, that includes calls dedicated to: Renewable Energy; Energy Systems, Grids and Storage; Carbon Capture, Utilisation and Storage.
- Destination 4 Efficient, sustainable and inclusive energy use, including calls for both buildings and industry.

The Built4People partnership was then presented, a Horizon Europe co-programmed partnership which aims at ensuring the creation of a sustainable and people-centred building ecosystem, a particularly central theme for social housing. Built4People, among the other aspects, involves stakeholders on two levels: a partnership board, and a stakeholder forum, with a community of experts in "built environment".

# 3.3. Key Findings From the Italian Webinar

This section presents the key findings from the capacity building webinar. The section is divided into six tables, with each table corresponding to stakeholder type, and the obstacles and possible solutions for the obstacles.

SOCIAL HOUSING MANAGERS		
Obstacles	Possible solutions	
Uncertainty from many social housing organisations (SHO) about the best financial solution for energy efficiency (EE).	For large operations, the PPP proved to be the most concrete hypothesis, since it allows the Public Body to concentrate on defining the objectives to be achieved in terms of public interest and quality of the services offered, leaving the costs and related risks of planning, construction, implementation and financing to the private partner.	
Since 2021, many Italian Social Housing companies have attempted to promote energy	In order to carry out the operations, it was necessary to take advantage of the financial,	



efficiency operations, but did not have adequate fiscal or financial capacity to manage tax credits. Working on social residential buildings tends to create conditions that are not always theoretically foreseen in the design phase.

If the Social Housing buildings are inhabited, the permanence of the tenants has two consequences: not all interventions can be carried out, and the implementation conditions tend to be more costly in terms of time and organisation.

Existing doubt: a PPP contract for energy efficiency may NOT provide guaranteed savings in consumption.

fiscal and operational management skills and capabilities of qualified private companies.

Preventatively, to contemplate a first design phase, then a consultancy phase with tenants, and then a final design phase, dedicated to required adjustments.

The PPP procedures are complex but can be managed in a fairly short time, even if it is essential for the future to move to a more complete contractual structure such as that envisaged by Repower EU.

ACADEMIA & CIVIL SOCIETY		
Obstacles	Possible solutions	
NIMBY phenomenon & reluctance from the market.	Social acceptance must be addressed referring, at the same time, to the acceptance from the civil society and to the acceptance from the market actors.	
In Italy, the use of RES is growing too slowly, also due to social opposition.	Renewable Energy Communities are the key to a democratic and participatory energy transition.	
It has been proved that REC do not work effectively without the management of a big entity, thus losing their democratic nature.	REC could be managed by Municipalities, ensuring a democratic participation of the community through citizens assemblies.	
Diminished trust, over time, in the benefits promised by RES.	Process of active participation and involvement, from the early stages of the planning for RES uptake. Use of the "liking by doing" approach.	
Instance for a more concrete distributional justice of RES benefits.	The participation of the communities to the investment (e.g. Crowdfunding) has proved to be successful in improving social acceptance.	
Lack of transparency in decision-making.	Use of a co-design approach (even better if this approach is systematised and institutionalised, also inside RECs) with the communities.	
Market uptake is blocked by the role of consumers.	<ul> <li>Questionnaire survey of citizens' preferences on the energy transition</li> </ul>	



	<ul> <li>(Swiss best practice, since 2011 IWOE, University of St. Gallen)</li> <li>Accurate scientific literature on the reasons for purchasing individual green technologies.</li> </ul>
In Italy, the regulation of the Energy Services Manager of 2024 penalises those who invested first in RECs.	The regulation should be revised.
The bureaucratic side of authorising the creation of RECs is complex and not very accessible.	Establishment of official and actually operative contact points for the institution of RECs.
There are few support tools for entities who would like to create a RECs without a public or private promoter.	Establishment of roundtables with entities to understand their needs, so to customise the new support tools.

FINANCIAL INSTITUTIONS & FUNDING PROGRAMMES		
Obstacles	Possible solutions	
Perceived lack of financial incentives.	Tax benefits have been established in the Legislative Decree 19.05.2020 No. 34, converted with amendments to Law 17.07.2020 No. 77 (the so-called "Super bonus 110%").	
PPP proposals from SHO leave the costs and related risks of planning, construction, implementation and financing to the private partner.	<ul> <li>State incentives and safeguarding clauses in the PPP contracts.</li> <li>To reassure private actors through the monitoring of efficiency KPIs (efficiency parameter and a comparison with historical consumption through safety coefficients linked to user behaviour).</li> </ul>	
"Super bonus" incentive through tax credits is poorly suited to giving rise to the fruitful conflict of interest between public demand and market supply (as can be seen from the topic of KPIs and the contractual structure and from the disinterest in reducing implementation costs).		
The procedures to obtain European funding for EE projects are too complex and difficult to access.	APRE coordinates the Horizon Europe project "GREENET", that aims at simplifying applicants' access to, among other CL5 calls, energy related calls.	
Horizon Europe has launched the co- programmed partnership "Built4People", which aims at ensuring the creation of a sustainable		



and people-centred building ecosystem, a particularly central theme for social housing.

<b>ESCOs</b>		
Obstacles	Possible solutions	
To maintain a comfortable temperature inside the house, people have to increase the energy requirements for H&C, with an increase of the related costs as a consequence.	The reduction of energy requirements (and, therefore, of the related costs) to maintain a comfortable temperature inside the building is inextricably linked to the improvement of the insulation of building envelopes, which brings to the reduction of heat dispersion and waste.  The traditional models of building construction, therefore, must absolutely be updated and integrated with the use of RES.	
The ventilation of buildings, necessary for sanitary reasons, causes heat loss.	<ul> <li>The more airtight the building envelope is, the lower the ventilation losses will be. Furthermore, an energy input that is often not considered is the solar radiation that enters through windows.</li> <li>Installation of heat recuperator on existing Air Handling Unit or Controlled Mechanical Ventilation: with this intervention, the ventilation losses are partially compensated.</li> </ul>	
Losses due to transmittance of surfaces.	Interventions that affect the transmittance of surfaces, reducing losses:  - External insulation or internal false wall;  - Attic insulation;  - Insulation of the attic towards non-return valve or crawl space;  Roof insulation	
Need for practical interventions to reduce energy poverty.	Suggested effective interventions to reduce energy costs both on the short and the long run: - Replacement of lamps with LED systems; - Redevelopment of the lighting system; - PV installation.	



POLICY	
Obstacles	Possible solutions
Need for a more rational use of the energy.	Inspire a behavioural change in the population regarding their approach to the use of energy.
Need to increase energy transformation efficiency.	Use of innovative H&C systems.
Lack of economic encouragement from the authorities towards the use of RES.	In Italy, the State pays incentives on the "shared energy" from REC.
Energy saving and energy efficiency reduce pollution resulting from energy production, but this does not automatically imply an increase in the use of green energy. Need for integration and differentiation of energy sources.	National policy framework that establishes a holistic approach that is a combination of energy saving, energy efficiency and increased use of the RES.
In Italy, since 2011, the 50% of the energy needs for the production of DHW + Heating + Cooling must be covered by RES.	

SMEs	
Obstacles	Possible solutions
Fear that the benefits of RES will not concern local communities, but only the international market.	Use of the "keep it local" approach, involving the community in the decision making process and the local SMEs in the supply chain.
RECs' potential is still unexplored and too little communicated to the communities.	Awareness Raising Campaigns on the benefits of RECs, including field visits to already established ones.

# 3.4. Conclusion

The Italian capacity building webinar offered valuable insights into the challenges and opportunities surrounding EE and sustainability in residential buildings. Discussions ranged from the significance of energy-saving practices and legislative requirements to strategies for social acceptance and operational proposals for EE renovations.

A key takeaway was the importance of collaboration and innovation in advancing energy efficiency goals. PPP were highlighted as effective models for large-scale renovations, with emphasis on managing tax credits, financial capacity, and tenant involvement. Moreover, the webinar underscored the need for community engagement to foster social acceptance, recognising proactive involvement and transparent decision-making as essential elements.



Additionally, European funding opportunities were identified as crucial avenues for supporting sustainable initiatives in Italy's residential sector. Insights into Horizon Europe Cluster 5 and the Built4People partnership provided valuable information on funding opportunities and objectives, particularly in the context of EE initiatives.



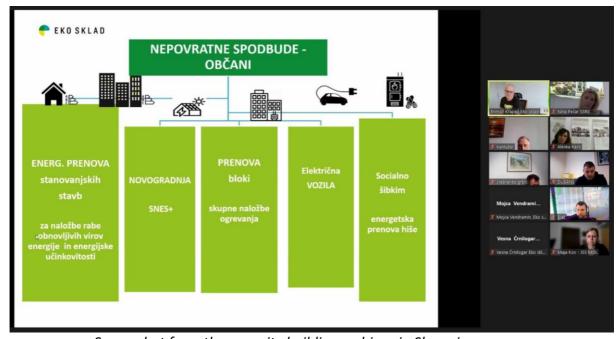
# 4. Report on Webinar in Slovenia

# **4.1.** General Information on the Webinar

Country	Slovenia	
Date and time	11th April 2024, 09.00 - 11.00	
Target group level (Local, regional or national)	Regional	
Topic of webinar	Investments in energy efficient renovation projects of public housing and buildings in Slovenia.	
Participants Participants		
Total	11	
SHOs	4	
Financial Institutions	3	
SMEs	2	
Policy	1	
Civil Society	1	



Agenda Agenda	
09.00	Presentation of the Super-i project
09.15	Presentation of the demo project - Neža Trbovlje, activities
09.45	Presentation of the Eco Fund - tenders (grants, loans) for energy rehabilitation
10.00	Presentation of possible loans by JSS MOL
10.15	Presentation of survey results
10.30	Debate and conclusions



Screenshot from the capacity building webinar in Slovenia.

# 4.1.1. Introduction of Speakers

## Nina Pečar

Housing Fund of the Republic of Slovenia. The Fund's vision is to become an effective national financial and real estate institution with an established system of products for the provision of diverse housing supply, which will offer appropriate measures and instruments with its own state and foreign financing, and at the same time bear the role of the main contractor and shaping the country's housing policy.

# Maja Kos



Head of the Department for Legal and Administrative Tasks in the Public Housing Fund of the City Municipality of Ljubljana. The core activity of the City of Ljubljana's Public Housing Fund (PHF) is the resolution of residents' housing problems, specifically the allocation of non-profit housing for rent.

## Primož Krapež

Consultant for energy renovations at Eco Fund. Eco Fund, Slovenian Environmental Public Fund (Eco Fund), was established in 1993. Its main purpose is to promote development in the field of environmental protection by offering financial incentives such as soft loans and grants for different environmental investment projects.

# **4.2.** Summary of the Discussed Topics

The following section covers a summary of the capacity building webinar in Slovenia. It provides insight into the initiatives and challenges faced in Slovenia, as well as perspectives from key stakeholders actively engaged in addressing housing and energy efficiency issues. The webinar hosted three speakers, Nina Pečar from the Housing Fund of the Republic of Slovenia, Maja Kos from the Public Housing Fund of the City Municipality of Ljubljana, and Primož Krapež, a consultant for energy renovations at Eco Fund. The webinar shed light on ongoing projects, funding mechanisms, and hurdles encountered in promoting EE building renovations and ensuring sustainable housing solutions. Through comprehensive analysis and stakeholder discussions, the session identified barriers and proposed actionable solutions to enhance EE, promote renovation efforts, and address the complex landscape of housing ownership and management in Slovenia.

# **4.2.1.** Presentation of the SUPER-i project and a demo project that is being implemented in Slovenia.

The demo case that was undergoing in Slovenia was presented, and the activities carried out by the Housing Fund of the Republic of Slovenia. Afterwards followed the business policy of the Housing Fund of the Republic of Slovenia for the period 2021-2025, which represents the key strategic directions of the fund's operation, and their implementation of the previous Business Policy for the period 2017-2020. Additionally, the planned activities, programs and tasks for individual areas and measures in the period in question, according to legal and the professional basis and directions and goals of the Resolution on the National Housing Program 2015–2025 (ReNSP15–25, Official Gazette of the RS, No. 92/2015) in its second medium-term period from 2021 to 2025.

The Fund's vision is to become an effective national financial and real estate institution with an established system of products for the provision of diverse housing supply, which will offer appropriate measures and instruments with its own state and foreign financing, and at the same time bear the role of the main contractor and shaping the country's housing policy. The set business goals are based on the past activities and capabilities of the Housing Fund of the Republic of Slovenia for further business, as well as the planning of business changes in the period 2021 to 2025. The goals are realised within the framework of the Fund's work processes.



# 4.2.2. Presentation of current Eco Fund tenders, tenders for grants and crediting of energy renovations.

The Eco Fund began with soft loans for investments in environmental protection as a revolving fund. Perhaps the most significant aspect of Eco Fund's operating environment is the requirement that Eco Fund maintains the real value of its assets. For this reason, Eco Fund has provided support to environmental investments through soft loans and developed a strong focus on the financial sustainability of the projects it supports. In 2008, Eco Fund was granted the use of additional financial mechanisms such as grants to support environmental investments. Grants are financed mostly by fees paid by end users of energy and funds from the climate change fund through revenues from CO2 allowances.

As a result of lack of interest, financial institutions now offer more favourable loans for energy renovations, renewal of calls for grants, increase in grants to encourage investment in the energy efficiency of buildings. Lower requirements for the allocation of funds, lower application conditions and the success of obtaining funds.

## 4.2.3. Public Housing Fund of the City Municipality of Ljubljana

The PHF is the central institution for the implementation of the City of Ljubljana's housing policy for the next medium-term period and the city's housing programme, as well as administrative tasks in the area of housing over which the city has jurisdiction.

With respect to the supply of housing, the PHF encourages the construction of new housing and the improvement of the quality of existing housing. It also ensures the construction of non-profit housing, the renovation and maintenance of owner-occupied housing and apartment buildings.

In accordance with the City of Ljubljana's housing programme, the PHF is responsible for maintaining lease relationships in connection with housing.

The core activity of the City of Ljubljana's Public Housing Fund (PHF) is the resolution of residents' housing problems, specifically the allocation of non-profit housing for rent.

In this part of the capacity building webinar, the Public Housing Fund of the city municipality of Ljubljana presented the public tender for loans for the maintenance and renovation of apartments and buildings. The tender is carried out for citizens of Ljubljana, and the loans are intended for persons for maintenance of the dwelling, and also for the maintenance of buildings.

# 4.3. Key Findings From the Slovenian Webinar

Below are the challenges of working with energy renovations, such as legal barriers, long payback periods, insufficient and unattractive grants, and outdated regulations for non-profit public rental housing.

## Lack of awareness

During the webinar, it became clear that energy-efficient refurbishment faces barriers such as insufficient information about renovation measures' health and quality impacts, and limited understanding of technical possibilities. Raising awareness among tenants, who are predominantly



older and unaware of renovation benefits, is crucial. On the other hand, it seems like tenants are mostly happy, cooperative and want to participate in carrying out the EE refurbishments, once properly informed. Residents are also unfamiliar with the possible technical solutions, advances in materials, and the same applies to the building managers, who also are unfamiliar with RES. Increasing grants and lowering interest rates for building energy refurbishments would significantly boost renovation rates. As energy-efficient building renovations are seen as too expensive, it creates a dilemma of building new residential buildings or energy rehabilitation of existing ones.

During the webinar, SHMs present were asked if they communicated the financial benefits, the health benefits, the increased comfort, or the environmental impact that follows energy refurbishments. The SHM answered they only communicated the financial benefits and the increased comfort.

The SHM was also asked if they collaborated with energy service companies (ESCOs) to which they replied that cooperation with ESCOS is not widespread in Slovenia, and they generally don't have not a lot of interactions with ESCOs and it needs to be promoted as a good solution.

# Fragmented ownership

Lack of interest in financial services to support EE refurbishment is partly due to issues related to fragmented ownership of buildings, or owners being unreceptive to energy related renovations, and general lack of awareness. Moreover, if a building owned by the Eco Fund is getting EE renovations, the investment is not credited, but covered by the fund's own resources. Therefore, it is a better business case to receive grants. But the amount of financial support via grants depends on the form of ownership of the company, such as public enterprise or private limited company.

Financial institutions are providing a limited number of loans, but they need consent from 100% of owners to obtain credit against the reserve fund, and it is very difficult to obtain that level of consent. Furthermore, the SHM does not receive profit from the administrative work. Nonetheless, financial institutions have insurance if the debt is not being paid.

## **Key insights from group discussions**

During a group discussion at the end of the webinar, it was established that there is a lot of potential in renewing the Housing Fund as the need for energy renovations is obvious. The main obstacle to carry out refurbishments or renovations is the limited amount of investments, financing loans, and lack of possible reimbursement of the investments. Also, the fragmented ownership structure and decision-making are particularly problematic in multi-apartment buildings, as it is necessary to secure consent to get sufficient financial resources.

Summarising the main barriers identified in group discussions: Lack of awareness about energy-efficient renovations, difficulty in securing renovation funds like grants and interest-free loans, and challenges in acquiring investments for energy-efficient building renovations.



The following section presents the key findings from the capacity building webinar. The section is divided into six tables, with each table corresponding to stakeholder type, and the obstacles and possible solutions for the obstacles.

SOCIAL HOUSING MANAGERS	
Obstacles	Possible solutions
The energy rehabilitation of the building has no impact on increasing owner's revenues from rental income (limited motivation to invest)	Reducing the requirements for energy performance of buildings which will lead to a greater number of smaller investments in the energy rehabilitation of the building
The amount of grant receipt also depends on the form of ownership of the company (public enterprise vs. private limited company)	Change of legislations and rules regarding which kind of organisations, such as citizens or public enterprises are allowed to seek grants
Energy-efficient building renovations can be expensive and due to the limited number of financial resources difficult decision between building new residential buildings or energy rehabilitation of existing ones	More grants  Educating tenants on reducing consumption and promoting energy renovations
Lack of interest in energy renovations due to low dedicated grants	More dedicated grants

FINANCIAL INSTITUTIONS	
Obstacles	Possible solutions
Lack of interest in financial services due to fragmented ownership issues and many unreceptive and unfamiliar owners	Simpler procedures Promoting energy renovations
Large volume of applications for PV system subsidies - processing of applications takes time	Less administration

ESCOs	
Obstacles	Possible solutions
High complexity of implementation as a result of multiple stakeholders/owners of buildings	

# **HOUSEHOLD ORGANISATIONS**



Obstacles	Possible solutions
It is difficult to get enough consents to begin the rehabilitation process due to fragmented ownership issues and many less receptive landlords	More dedicated grants
Some neighbourhoods have low-income residents who are unable to afford to pay for energy-efficient building renovations	Educating owners on reducing consumption and promoting energy renovations  More dedicated grants

POLICY	
Obstacles	Possible solutions
Lack of interest in energy renovations due to low prices of district heating (in the municipality of Velenje)	More dedicated grants
Lack of interest in energy renovations due to the tedious legal administration	Changes of legislations, less administration

# 4.4. Conclusion

The Slovenian capacity building webinar offered a thorough exploration of the hurdles and opportunities in promoting EE building renovations and sustainable housing solutions within Slovenia. Led by speakers Nina Pečar, Maja Kos, and Primož Krapež, alongside active engagement with key stakeholders, the webinar covered ongoing projects, funding mechanisms, and the obstacles that Slovenia faced in the attempt to create more sustainable housing solutions.

Central to the discussions was the dilemma between the EE renovations and the practical challenges inhibiting their realisation. SHM often find themselves with only limited incentives for investment due to minimal impact on rental income. Financial constraints further compound the dilemma, as EE renovations entail substantial costs, presenting a choice between investing in new construction or revitalising existing buildings. This financial problem is increased by a shortage of dedicated grants and funding options, which hinder energy renovation efforts and impede effective project financing.

Moreover, a critical issue highlighted during the webinar was the general lack of awareness among tenants/owners and building managers regarding the benefits of EE renovations and the technical solutions available to them. Educating tenants/owners on energy consumption reduction and promoting the benefits of energy renovations emerged as imperative strategies to enhance participation and improve support for sustainable initiatives. Fragmented ownership structures also



emerged as a significant hurdle, with difficulties in securing consents from building owners due to intricate ownership arrangements and unreceptive landlords. Simplifying legislative procedures and rules was proposed as a potential solution to facilitate the renovation process and incentivise greater participation from building owners.

Financial institutions play a pivotal role in facilitating EE renovations, yet they also face challenges in providing services due to fragmented ownership issues and a lack of interest from building owners. Streamlining administrative procedures and actively promoting energy renovations were identified as measures to encourage greater participation from financial institutions. Additionally, the complexity of implementing energy renovations was underscored, with multiple stakeholders and building owners involved in decision-making processes. Enhancing stakeholder engagement and providing clearer guidance were proposed as essential strategies to simplify the implementation process and accelerate renovation efforts.

Local authorities, despite being key actors in driving sustainable housing initiatives, often exhibit low interest in energy renovations due to factors such as low district heating prices or administrative burdens. Policy changes, including adjustments to legislation and reduction of administrative hurdles, were highlighted as vital measures to incentivise local authorities to prioritise energy-efficient renovations and support sustainable housing initiatives.



# 5. Report on Webinar in Denmark

# 5.1. General Information on the Webinar

Country	Skanderborg, Denmark	
Date and time	28th of November 2023 from 10.00 - 13.00	
Target group level (Local, regional or national)	National	
Topic of webinar	Energy savings, financial models, and thermonet	
Participants Participants		
Total	35	
SHOs	29	
SMEs	3	
Policy	1	
Academia	1	
ESCOs	1	



	Agenda		
1.	Welcome Susanne Skårup, Skanderborg Municipality: Skanderborg Municipality energy conversion effort. Mikkel Jungshoved, BL: EU SUPER-i project. Jonas A. Johansen, EGC: Mentimeter questionnaire answer		
2.	Energy communities and solar cells - what can be done - what can't be done? Mikkel Jungshoved, BLs Operating Net		
3.	ESCO financing of housing companies' energy renovations - examples of ESCO 2.0 Henrik Bielefeldt, Sustain		
4.	Break – coffee and networking		
5.	Termonet – heat supply outside district heating areas and pilot project with energy storage of solar power  Henrik Bielefeldt, Sustain		
6.	The SUPER-i project develops financing solutions for housing companies on a European level energy effort Paola Zerilli, York University		
7.	Plenary debate and lunch		
8.	Concluding remarks		







Photos from the Danish capacity building hybrid webinar (photo credit: DriftsNet)

# 5.1.1. Introduction of Speakers

# Susanne Skårup

Climate coordinator, Skanderborg Municipality, with expertise within energy efficiency and biology.

#### **Henrik Bielefeldt**

Development Director, Sustain, expertise within financial models in energy efficiency.

## **Hans Bjerregaard**

Senior Consultant, EGC, expert in sustainable EU-projects

#### Paola Zerilli

Prof. Paola Zerilli, University of York (SUPER-I coordinator & SUPERSHINE Scientific Coordinator), financial modelling expert.

# **Mikkel Jungshoved**

Technical Consultant, expertise within energy management and social housing.



# 5.2. Summary of the discussed topics

This section shows the discussions from the Danish webinar on energy renovations and sustainability in social housing. The webinar was a hybrid webinar with physical participants in Skanderborg, Denmark and participants online. Speakers highlighted financing challenges, tenant engagement barriers, and regulatory hurdles. Collaborative efforts with the private sector were emphasised as crucial for driving progress, along with innovative financing strategies. Presentations focused on local carbon reduction goals, challenges in PV electricity production, and innovative financing models. Discussions underscored the need for streamlined procedures, clearer communication, and targeted awareness campaigns to overcome obstacles.

# **5.2.1.** Skanderborg Municipality

During the webinar, Skanderborg Municipality shared insights into their efforts to reduce carbon emissions, with a primary objective of achieving zero CO2 emissions by 2050 and a substantial 70% reduction by 2030. Despite the commitment, the municipality acknowledged the challenge of eliminating fossil fuel consumption in the transport sector and their reliance on imported electricity due to limited local renewable energy production.

The presentation emphasised the difficulty of establishing a sizable renewable energy production infrastructure within the municipality. As the goal of achieving zero CO2 emissions by 2050 persists, the municipality emphasises the importance of strategic initiatives to strengthen local renewable energy projects. Key areas of focus include incentivising local projects, fostering community involvement, and actively engaging with policymakers. Furthermore, there's an increasing demand for technological innovation through research and partnerships that involve the private sector in investment and expertise, driving forward renewable energy and sustainability efforts. These efforts are crucial in navigating the complexities of achieving their carbon reduction goals in the transport sector.

#### 5.2.2. BL

Boligernes Landsorganisation (abbreviated BL and directly translated to the National Housing Association) is an association created to support social housing organisations (SHO) in multiple aspects of their work, construction, and operation. The association has around 80% of the collected SHOs in Denmark as their members spread out through the whole country.

BL focused in their presentation on the social housing sector's aspiration to actively participate in the green transition on an equitable basis with the broader society. However, it was important to acknowledge the SHO sector's limitations in assuming a more prominent role in the green transition, given the financial constraints of the majority of this sector, which ultimately is the tenants. BL highlighted eight crucial points that needs further development to reach the goals of 2050:

## **Building Renovation Impact**

Renovating all social housing buildings was emphasised as a measure with the potential to reduce CO2 emissions by 6-8% in the building sector.



# **Barriers to PV Electricity Production**

The social housing sector faces challenges when it comes to PV electricity production. Even though BL has highlighted these challenges to the political system, they have yet to be addressed effectively. Compared to other stakeholders, the social housing sector has limited opportunities for PV electricity production because of these barriers. In terms of internal usage, social housing companies are generally restricted to utilising PV electricity within the same buildings. They benefit from exemptions on energy taxes and grid tariffs for this internal consumption, except when supplying non-residential buildings like laundries.

# **Direct Grid Connection Challenges**

Direct grid connections from RES electricity production plants to consumption without taxes and tariffs are feasible on 10 kV grids, but this may not be practical for social housing companies with smaller-scale production.

# **Membership Restrictions in Energy Communities**

Social housing companies often face regulatory restrictions that prevent them from becoming full members of energy communities due to rules governing "side activities." Despite these regulatory constraints, some companies choose to become members of energy communities anyway, somehow navigating the limitations to participate in renewable energy initiatives.

## **Practicalities of PV Electricity Production for Tenants**

Meeting tenant demands for PV electricity requires installing secondary electricity metres in each apartment.

# **Recommended Percentage of PV Electricity Production**

BL recommends social housing companies aim for a maximum of 20-25% of PV electricity production out of overall electricity consumption. Discussions included the potential for higher coverage using batteries for storage.

# **Caution Regarding Battery Usage**

Despite the evolving landscape, BL currently advises against applying batteries due to high costs and short lifetimes, with expectations of changes in the future.

## **Unrealised Energy Retrofitting Measures**

A notable backlog of unrealised energy retrofitting measures in Denmark was highlighted, stemming from social housing companies lacking the capacity to carry out expected energy renovations. The involvement of ESCOs was proposed as a potential solution to address this backlog and accelerate energy renovation initiatives.

#### **5.2.3.** Sustain

Sustain is a Danish small/medium-sized enterprise (SME) working as a consultant for energy optimisation working with general energy refurbishment, EV charger stations, and PV cells. During the webinar, sustain highlighted the ongoing building renovation initiatives in the social housing sector, particularly focusing on energy-related measures. The presentation showcased Sustain



involvement in another Horizon Europe project, EVELIXIA. In the Danish pilot of this project, there is a focus on utilising a heat storage system for DHW as an affordable energy storage solution. This is designed to maximise the value of excess electricity generated from installed PV systems and improve overall system flexibility. Furthermore, the Danish pilot project explores "peak shaving" of heat consumption through digital management to reduce district heating costs. However, questions were raised about tenant acceptance of such innovative initiatives.

Sustain also emphasised its collaboration with Skanderborg Municipality in exploring the establishment of thermogrid heating solutions. These solutions are based on geothermal heat sources distributed at 10°C in plastic tubes, complemented by individual heat pumps. Despite the social housing sector having an organisational setup that is conducive to such innovations, there is a noticeable reluctance to take the initiative in establishing local thermogrid solutions.

Sustain underscored a gradual progress in implementing ESCO financing within the social housing sector, complementing the foundational energy measures supported by Landsbyggefonden. Despite expectations for the sector to independently undertake energy-saving measures, the reality indicates a slower pace of implementation.

Sustain addressed housing costs as encompassing operational expenses, energy costs, and other operational aspects, as essential when working on energy measures, opposed to just renting costs which offers a more comprehensive understanding of the financial landscape. This broader perspective aids in developing effective strategies that genuinely enhance housing affordability and sustainability for tenants. Moreover, it facilitates informed decision-making when implementing energy-saving measures by considering their long-term impact on overall housing expenses.

Sustain emphasised the positive impact of energy measures on reducing operational and repair costs, factors crucial for inclusion in cost models. Finding the right balance between tenant/social housing company guarantees and maintaining tenant motivation for energy consumption reduction through improved behaviour is a key consideration.

#### 5.2.4. APRE

During the webinar SUPER-i project partner APRE showed how financing tools and models for energy renovation of buildings, that incorporate direct credit lines and low-interest rates, can be used as they are in the pilot programmes in Italy, Slovenia, and Denmark. The presentation detailed various methods of PPP financing models, including:

# **PPP Shared Risk Facility**

A financing model where risks are shared among public and private entities.

## **PPP ESCO with Guaranteed Savings**

A model where an ESCO guarantees energy savings, providing financial security for the project.

## PPP ESCO Between the Bank and Building Owners

A partnership involving the bank and building owners, facilitated by an ESCO, to streamline financing processes.

The Italian pilot programme was specifically highlighted during the presentation, showcasing preliminary results that demonstrated positive outcomes through the application of these financing



tools. As an extension to this discussion, APRE provided a brief introduction to the new Horizon Europe project, SUPERSHINE, which focuses on energy renovation within housing districts instead of individual buildings.

# **5.3.** Key Findings from the Danish Webinar

The hybrid webinar primarily focused on exploring diverse financing options accessible to social housing companies for energy renovations in Denmark. Notable challenges such as legal complexities, extended payback periods, insufficient grants, and outdated regulations impede energy renovation efforts. Furthermore, tenants' financial constraints often hinder their participation in energy efficiency initiatives, consequently limiting both tenant involvement and the capacity of social housing companies to undertake necessary refurbishments.

Participants widely acknowledged the significance of strategic initiatives aimed at promoting local renewable energy projects, emphasising the importance of collaborative efforts with the private sector. Key findings highlighted the pivotal roles of collaboration, innovative financing strategies, and community engagement in fostering EE and sustainability within the social housing sector, essential for achieving long-term energy savings. Moreover, regulatory and technical barriers emerged as significant hindrance, delaying the adoption of RES. Addressing these barriers is crucial for supporting the transition towards more sustainable solutions.

During discussions, it was evident that SHMs perceive ESCOs as complex and bureaucratic models, leading to missed opportunities. Simplifying the bureaucratic aspects of securing funds and providing clear guidance were underscored as essential. Many participants identified The National Building Fund (Landsbyggefonden) as a major source of financing for building renovations involving energy-saving measures. However, there remains a lack of understanding regarding obtaining loans, especially with ESCO financing models.

Another notable concern raised was the risks lenders run when providing loans for energy renovations in social housing. Participants highlighted the importance of financial guarantees from entities like the National Building Fund to mitigate these risks and facilitate funding for energy efficiency measures. Additionally, there's a need for more favourable financing options to incentivise sustainable investments in EE projects.

The webinar also emphasised the challenges in effectively communicating with tenants about EE refurbishments in social housing. Technical language barriers often lead to misunderstandings and hinder tenants' awareness of ongoing EE measures. Targeted awareness campaigns and education about the benefits of EE were recommended to address these challenges and enhance tenant knowledge.

Overall, the group discussions provided valuable insights into energy renovation possibilities and financing for social housing companies. Collaboration, innovative financing strategies, and community engagement emerged as crucial elements in advancing EE and sustainability within the social housing sector, despite the identified regulatory and technical barriers.

The following section presents the key findings from the capacity building webinar. The section is divided into six tables, with each table corresponding to stakeholder type, and the obstacles and possible solutions for the obstacles.



SOCIAL HOUSING MANAGERS	
Obstacles	Possible solutions
Tenants struggle to maintain sustainable practices in their daily lives.  Limited knowledge and awareness among	Establish clear green objectives to incorporate sustainability into the department's operations. Educational materials and communication to
residents and tenants.	promote energy-saving practices. Clear information and incentives can motivate behavioural changes.
Many social housing companies lack a systemic approach to manage energy-saving measures. It is perceived as too time-consuming and too challenging to interpret the data and communicate to residents. Clear guidelines for data management are needed.	
Constant new addition of staff members	Offering training to new staff members to cultivate ownership and promote active participation, giving them a voice in and involving them with energy-saving initiatives.

FINANCIAL INSTITUTIONS	
Obstacles	Possible solutions
The procedures to secure funding from the EU are too complex and challenging to access.	Simplify procedures
Long application procedures	Less administrative operations

ESCOs	
Obstacles	Possible solutions
Complex implementation due to multiple stakeholders or building owners.	Higher level of stakeholder engagement in the early stages.

SHOs	
Obstacles	Possible solutions
Many residents cannot afford energy-efficient building upgrades.	Grants



POLICY		
Obstacles	Possible solutions	
High risk in loans	Local authorities may reduce or eliminate lender risks by providing financial guarantees.	

SMEs		
Obstacles	Possible solutions	
Concern that the benefits will not impact local communities.	Engaging the community in the decision- making process with PPP	

## 5.4. Conclusion

The Danish webinar on energy renovations and sustainability in social housing provided insights into the challenges and opportunities facing Denmark's work towards EE and sustainability. Despite obstacles such as financing challenges, regulatory hurdles, and tenant engagement barriers, stakeholders remain committed to advancing progress through collaborative efforts and innovative strategies.

One of the primary challenges highlighted during the webinar is the complex legal landscape surrounding energy renovations, which poses significant hurdles for social housing companies navigating regulatory frameworks. Additionally, investments in energy renovations often entail extended payback periods, deterring immediate adoption despite their long-term benefits. Limited availability of grants and subsidies further constrains the financial resources available for energy renovation projects, underscoring the pressing need for alternative funding sources and innovative financing strategies.

Tenant engagement emerged as a critical factor in driving EE initiatives, yet financial constraints and limited awareness among tenants present significant barriers. Collaborative efforts with the private sector were identified as instrumental in overcoming these challenges, bringing together resources, expertise, and innovation necessary for progress. Partnerships between social housing companies, governmental agencies, and private stakeholders were highlighted as effective means of leveraging diverse perspectives and resources to address complex challenges effectively.

Innovative financing strategies, including PPPs and energy performance contracts (EPC), offer promising opportunities for securing alternative funding sources for energy renovation projects. Financial models like ESCOs with guaranteed savings provide assurance to investors and help mitigate financial risks associated with EE initiatives.

Community engagement emerged as a cornerstone of success, with clear communication and targeted awareness campaigns viewed as essential for educating tenants about the benefits of EE measures and increasing their participation. Involving tenants in decision-making processes and providing transparent information were also identified as key strategies for fostering a sense of ownership and commitment towards energy-saving initiatives.

Moreover, addressing regulatory and technical barriers is crucial to creating an enabling environment for energy renovation projects. Streamlining complex approval processes and



updating outdated standards are essential steps towards facilitating the adoption of RES and EE technologies, thereby accelerating progress towards sustainability.



# 6. Conclusion on Webinars

Three capacity building webinars have been held, one each in Italy, Slovenia, and Denmark. The webinars invited key stakeholders to partake and handpicked speakers for getting the most updated and on-point capacity building in the three pilot countries' national context.

In total, 89 people attended the webinars. The three biggest groups of stakeholders represented were SHOs with 39% of the collected participants, policy-workers with 10% and academia with 9%. Other stakeholder categories included ESCOs and SMEs. See Annex for more detail. The table below shows how the participants were distributed.

	Participants	
Italy	43	
Slovenia	11	
Denmark	35	
Total	89	100%
SHO	44	39%
Policy	11	10%
Academia	10	9%

Based on the importance of EE in residential buildings as a critical component of broader sustainability and climate action efforts, each webinar underscored the significance of reducing energy consumption, integrating RES, and enhancing building performance to mitigate climate change and promote environmental sustainability.

The capacity building in Italy, Slovenia, and Denmark provided valuable insights into the challenges and opportunities surrounding EE in residential buildings. While each webinar addressed unique regional contexts and priorities, several similarities and differences emerged in their discussions, highlighting both common challenges and diverse approaches to addressing them. Below is a list of the barriers and possible solutions compiled from the three capacity building sessions divided into seven groups. These findings can support development of policy recommendations or further studies. The list will be discussed in more detail below.

## **EE in Residential Buildings**

- More emphasis on energy-saving practices, efficiency measures, and renewable energy integration.
- More legislative mandates for renewable energy integration to meet energy needs.
- New ventilation strategies to mitigate heat loss and maintain indoor air quality.



## **Social Acceptance of Energy Transition**

- Obtain the three dimensions of social acceptance; socio-political, community, and market acceptance.
- Get support from renewable energy communities (RECs) in democratising the energy transition.
- Be proactive in community engagement and practise transparent decision-making.

## **Operational Proposal for EE Renovation of Social Housing**

- PPPs are effective models for large-scale renovations.
- Create comprehensive contractual structures to guarantee savings and manage risks.
- Explore European funding opportunities like Horizon Europe Cluster 5 and Built4People partnership.

## **Challenges in Energy Renovations**

- Limited motivation and financial constraints for SHM and tenants.
- Lack of awareness among tenants about EE renovations.
- Fragmented ownership structures hindering renovation consent.
- Legal complexities and outdated regulations are impeding renovation efforts.
- Extended payback periods and insufficient grants constrain sufficient financial resources.
- Tenant engagement barriers are due to financial constraints and general limited awareness.

#### **Collaborative Efforts**

- Use collaborative approaches with the private sector to drive progress in energy efficiency.
- Create partnerships between stakeholders to leverage diverse resources and expertise.
- Explore innovative financing strategies like PPPs and ESCOs.

## **Community Engagement and Regulatory Barriers**

- Clear communication and involvement of tenants in decision-making is important.
- Address regulatory barriers and technical challenges for successful implementation.

All three webinars identified common challenges hindering EE initiatives in residential buildings. Financial constraints, including limited funding options and long payback periods, emerged as a recurring barrier in Italy, Slovenia, and Denmark. The lack of awareness among tenants and building owners about the benefits of EE renovations was also highlighted across the webinars, underscoring the importance of targeted education and outreach efforts. Regulatory complexities and outdated standards posed additional challenges in all three regions, indicating the need for streamlined processes and updated policies to facilitate energy renovation projects.

Despite these shared challenges, the webinars also showed differences in regional contexts and approaches to addressing EE in residential buildings. As an example, the Italian webinar focused on legislative requirements supporting the integration of RES in building design. In contrast, the Slovenian webinar highlighted fragmented ownership structures and the lack of dedicated grants as key obstacles, illustrating the challenges faced by SHM in Slovenia. Similarly, the Danish webinar emphasised collaborative efforts between the public and private sectors as a fundamental strategy



for driving progress in EE and sustainability. Innovative financing models, such as PPPs and EPCs, were showcased as examples of effective approaches to overcoming financial barriers and incentivising energy renovations.

Furthermore, community engagement seemed to be a critical theme in all three webinars, although with varying degrees of emphasis and approaches. While the Italian webinar highlighted the importance of proactive community involvement and transparent decision-making processes, the Slovenian webinar emphasised the need for tenant education and involvement in decision-making. In Denmark, clear communication and targeted awareness campaigns were identified as essential strategies for fostering community engagement and increasing participation in energy-saving initiatives.

In conclusion, the capacity building from Italy, Slovenia, and Denmark provided valuable insights into the common challenges and diverse approaches to promoting EE in residential buildings in the EU. While regional differences in legislative frameworks, financing models, and community engagement strategies are obvious, the goal of transitioning towards more sustainable and EE built environments remains a shared priority. By exploiting the insights from these capacity building sessions, the SUPER-i project aims to foster cross-regional collaboration, enabling stakeholders to work towards overcoming our shared challenges and accelerating the progress towards a more sustainable future.



# 7. Annex

# 7.1. Capacity Building Webinar in Italy

# 7.1.1. List of Organisers of the Italian Webinar

Name (If possible)	Organisation	Role	Category
Riccardo Coletta	APRE	Senior Project Manager	Research Centre
Flaminia Rocca	APRE	Project Manager	Research Centre
Cristina Davi	ATER Trieste	Social Housing Executive Manager	SHO
	Order of the Architects of Trieste		Practitioners Association/Technical Expert

## 7.1.2. Participant List from the Italian Webinar

Organisation	Role	Category
Territorial Agency for Social Housing	SHM	SHO
University of Trieste	Financial Expert	Research Centre
APRE	Project Manager, Energy and Mobility Expert	Research Centre
Polytechnic of Milan	Financial Expert	Research Centre
ESCO Lazio	Technical Expert	ESCO
Territorial Agency for Social Housing	SHM	SHO
FEDERESCO	Technical Expert	ESCO
Municipality of Calatafimi Segesta	Environmental protection expert	Policy
Lazio Region	EU Project Manager	Policy
APRE	National Contact Point - Horizon Europe CL5 Climate, Energy and Mobility	Research Centre
Autonomous Social Housing Institute of Naples	SHM	SHO
Territorial Agency for Social Housing	SHM	SHO
ALENS Pavia	Technical expert	ESCO
Municipality of Catania	Architect and technical expert	Policy
ENEA	National Agency for new technologies, energy and sustainable economic development	Research Centre
Municipality of Trieste	Architect and technical expert	Policy



## D4.3 - Report on Webinars for Three Countries

Architects, Planners, Landscape Designers and Environmental Protectors of the Pordenone Province	Environmental expert	Policy
Territorial Agency for Social Housing	SHM	SHO
ATER Pordenone	SHM	SHO
Territorial Agency for Social Housing	SHM	SHO
Friuli Venezia Giulia Region	Agency for the Energy Politics FVG	Policy
Swiss Italian University of Lugano	Researcher in the Economics  Department	Research Centre
Intesa San Paolo SpA	RES expert	Financial Institute
Pozzoli Firm	Senior Consultant, technical expert	Consultancy Company on Energy Efficiency
Friuli Venezia Giulia Region	Environmental policy expert	Policy
ATER Trieste	Engineer, Technical Area Management Officer	SHO
UniCredit SpA	Financial consultant	Financial Institute
ATER Pordenone	SHM	SHO
BNL – National Work Bank	Investment consultant	Financial Institute
Municipality of Rome	EE Consultant	Policy
Order of the Architects of Rome	Architect, technical expert	Research Centre
Territorial Agency for Social Housing	SHM	SHO
APRE	Horizon Europe CL5 Climate, Energy and Mobility Competence Team	Research Centre
ESCO Lazio srl	Technical expert	ESCO
ESCO Montagna FVG	Architect and technical expert	ESCO
Kallipolis	RES Social Acceptance Expert	Practitioners Association
ESCO Italia Srl	Technical expert	ESCO
ATER Gorizia	SHM	SHO
Polytechnic of Milan	Environmental expert	Research Centre
University of York	Associate Professor in Finance	Research Centre
FVG Tenants Association	Tenants of social housing buildings	Civil Society
MASE	Italian Ministry of the Environment and of Energy Security	Policy
Sapienza University of Rome	Financial researchers	Research Centre
FeNEAL UIL	Union representative	Policy



## 7.1.3. Agenda of the Webinar in Italy









## SUPER-i Webinar

"La Transizione Energetica negli Edifici Residenziali Pubblici"

25 Marzo 2024 (15:00 - 17:30)

Form di Registrazione: Link

Webinar: Teams Link

	Agenda
15:00 – 15:15	Introduzione al webinar – Prof.ssa Paola Zerilli, Università di York, Coordinatrice del progetto SUPER-i; Riccardo Coletta, APRE, Agenzia per la Promozione della Ricerca Europea
15:15 – 15:45	L'efficientamento energetico nell'edilizia residenziale Stefano Mossenta – Certificatore Casa Clima - APE FVG (Agenzia per l'Energia del FVG)
15:45 – 16:15	L'accettazione sociale della transizione energetica (povertà energetica/CER) – Alessandra Motz – Ricercatrice presso l'istituto di ricerche economiche, Università della Svizzera Italiana (USI) di Lugano
16:15 – 16:45	Caso studio: l'efficientamento energetico ERP (Edilizia residenziale pubblica) – Simone Pressacco, ATER Trieste; Paolo Parrini, Studio Pozzoli
16:45 – 17:10	Finanziamenti europei alla transizione energetica – Miriam de Angelis, Horizon Europe National Contact Point & Competence Team 'Climate, Energy and Mobility", APRE – Agenzia per la Promozione della Ricerca Europea
	Noemi Tesauro, Horizon Europe Competence Team 'Climate, Energy and Mobility", APRE – Agenzia per la Promozione della Ricerca Europea
17:10 – 17:30	Q&A

Modera: Riccardo Coletta, Senior Project Manager – APRE, Agenzia per la Promozione della Ricerca Europea

L'evento è accreditato presso l'Ordine degli Architetti di Trieste (2 crediti formativi professionali – CFP)

SUPER-i project

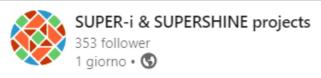




## 7.1.4. LinkedIn Posts for the Italian Webinar







The recent webinar that we held "La Transizione Energetica negli Edifici Residenziali Pubblici" ("Energy Transition in Public Residential Buildings") was a success, drawing significant interest and participation.

Moderated by Flaminia Rocca (APRE - Agenzia per la Promozione della Ricerca Europea), the webinar provided invaluable insights into energy transition strategies within residential settings.

SUPER-i's Project Coordinator, **Paola Zerilli** (**University of York**) provided insights to both SUPER-i and SUPERSHINE projects. Her presentation included a detailed walkthrough of the portal, e-room features, and lighthouses.

Noemi Tesauro led the final session on behalf of APRE - Agenzia per la Promozione della Ricerca Europea, with Miriam de Angelis addressing participant inquiries during the Q&A session.

A big thank you to all participants for their active involvement and contributions to the discussion! Let's continue our collaborative efforts towards a sustainable future.

## Vedi traduzione





# 7.2. Capacity Building Webinar in Slovenia

# 7.2.1. List of Organisers of the Slovenian Webinar

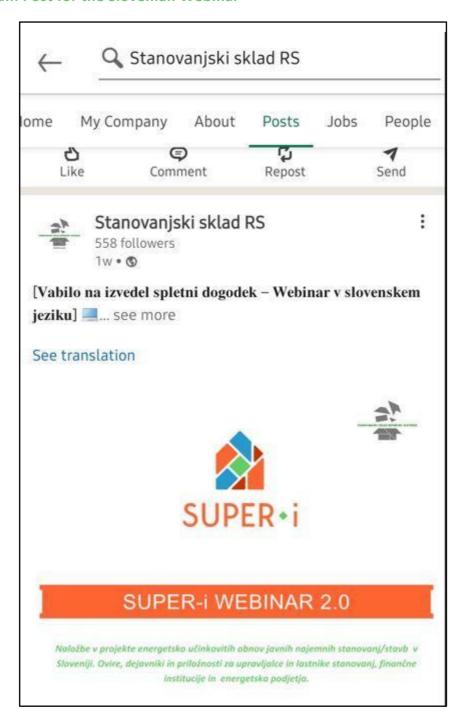
Name (If possible)	Organisation	Role	Category
Nina Pčear	Stanovanjski sklad RS	Organiser, speaker	SHO
Alenka Kern	Stanovanjski sklad RS	organiser	SHO

## 7.2.2. Participant List from Slovenian Webinar

Organisation	Role	Category
Public housing fund of the city municipality of Ljubljana; Javni stanovanjski sklad Mestne občine Ljubljana	Participant, speaker	SHO
Eco Fund	participant	Financial institution
Eco Fund	Presenter, speaker	Financial institution
Eco Fund	participant	Financial institution
Spekter d.o.o.	participant	SME
SPL d.d.	participant	SME
Občina Velenje	participant	Municipality
citizen	participant	CIVIL
Stanovanjski sklad RS	participant	SHO
Stanovanjski sklad RS	Organiser, speaker	SHO
Stanovanjski sklad RS	organiser	SHO

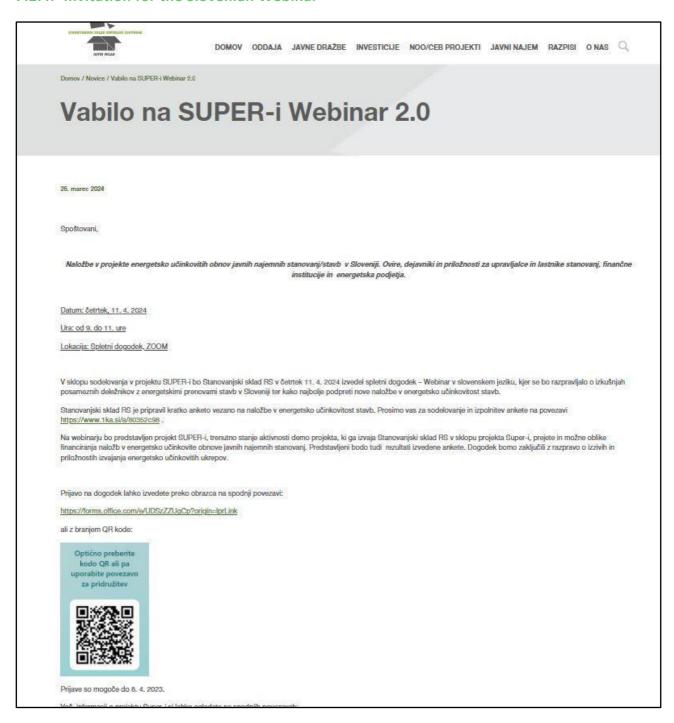


## 7.2.3. LinkedIn Post for the Slovenian Webinar





#### 7.2.4. Invitation for the Slovenian Webinar





# 7.3. Capacity Building Webinar in Denmark

# 7.3.1. List of Organisers of Danish Webinar

Name (If possible)	Organisation	Role	Category
European Green Cities	Non-profit	Organiser, Speaker	SME
BL	SHO	Organiser, Speaker	SHO
Skanderborg Municipality	Municipality	Organiser, Speaker	Municipality
SUSTAIN	SME	Speaker	ESCO

## 7.3.2. Participant List From the Danish Webinar

Organisation	Role	Category
ALBO	Participant	SHO
ALBOA - Almen Boligorganisation	Participant	SHO
Aarhus	raiticipant	3110
ALBOA - Almen Boligorganisation	Participant	SHO
Aarhus	rarticipant	3110
ALBOA - Almen Boligorganisation	Participant	SHO
Aarhus	rarticipant	3110
Boligforeningen Århus Omegn	Participant	SHO
Boligforeningen Århus Omegn	Participant	SHO
Boligkontoret Århus	Participant	SHO
Boligkontoret Århus	Participant	SHO
Boligkontoret Århus	Participant	SHO
Boligkontoret Danmark	Participant	SHO
Boligkontoret Danmark	Participant	SHO
Boligselskabet Holstebro	Participant	SHO
Boligselskabet Holstebro	Participant	SHO
Boligselskabet Nordjylland	Participant	SHO
Boligselskabet Nordjylland	Participant	SHO
Boligselskabet Sct. Jørgen, Viborg	Participant	SHO
Boligselskabet Sct. Jørgen, Viborg	Participant	SHO
Boligselskabet Sct. Jørgen, Viborg	Participant	SHO
DOMI Bolig	Participant	SHO
DOMI Bolig	Participant	SHO
DOMI Bolig	Participant	SHO
Juelsmindehalvøens Almene	Participant	SHO
Boligselskab af 1946	rardopant	3110
Kollegiekontoret i Aarhus	Participant	SHO

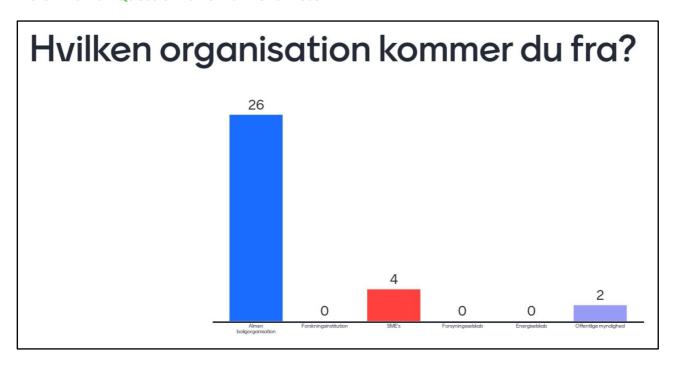


Organisation	Role	Category
ALBO	Participant	SHO
ALBOA - Almen Boligorganisation	Participant	SHO
Aarhus	rarticipant	3110
ALBOA - Almen Boligorganisation Aarhus	Participant	SHO
ALBOA - Almen Boligorganisation Aarhus	Participant	SHO
Boligforeningen Århus Omegn	Participant	SHO
Boligforeningen Århus Omegn	Participant	SHO
Boligkontoret Århus	Participant	SHO
Boligkontoret Århus	Participant	SHO
Boligkontoret Århus	Participant	SHO
Boligkontoret Danmark	Participant	SHO
Boligkontoret Danmark	Participant	SHO
Boligselskabet Holstebro	Participant	SHO
Kollegiekontoret i Aarhus	Participant	SHO
Neogrid Technologies	Participant	SME
Silkeborg Boligselskab	Participant	SHO
Silkeborg Boligselskab	Participant	SHO
Skanderborg Andelsboligforening	Participant	SHO
Ungdomsbo	Participant	SHO
Skanderborg Kommune	Organiser, Speaker	Municipality
SUSTAIN	Organiser, Speaker	ESCO
York University	Speaker	University
EGC	Organiser, Speaker	SME
NAVITAS	Participant	SME
BL – Danmarks Almene Boliger	Organiser, Speaker	SHO

1.



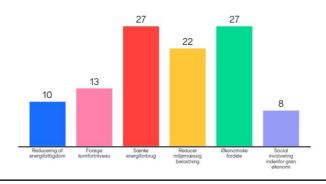
## 7.3.3. Danish Questionnaire via Mentimeter



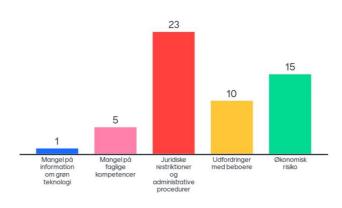




Hvad er fordelene (økonomiske, politiske, sociale og miljømæssige) ved investeringer indenfor energieffektivitet i den almene bolig sektor?

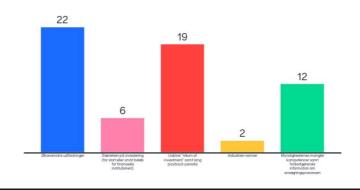


Hvad er de største forhindringer ifm. investeringer indenfor energieffektivisering i den almene boligsektor?

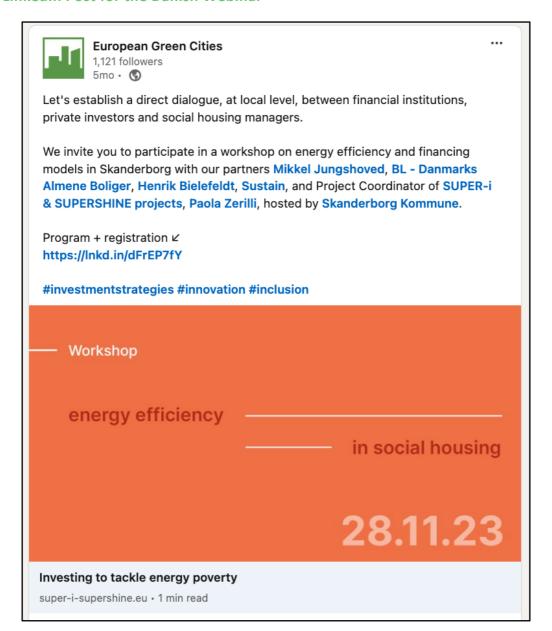




# Hvilket andre forhindringer er der i investeringer indenfor energieffektivisering i den almene boligsektor?



#### 7.3.4. LinkedIn Post for the Danish Webinar





## 7.3.5. Invitation and Agenda of the Danish Webinar









#### TEMADAG OG WORKSHOP OM ENERGIBESPARELSER, FINANSIERING OG TERMONET

Arrangeret i et samarbejde mellem Skanderborg Kommune, BL, EGC og Super-i projektet

> TIRSDAG DEN 28. NOVEMBER 2023, 10:00-13:00 STED: Skanderborg Rådhus, Fælled 1, 8660 Skanderborg

Vi vil på dagen se på, hvilke løsninger der findes i forhold til den grønne omstilling af de almene boliger både i forhold til at etablere termonet, uden for fjernvarmeområder og energirenoveringer. Vi vil desuden tale om de muligheder, der er med solcelleløsninger og energifællesskaber

#### PROGRAM FOR DAGEN:

- Velkomst:
  - Susanne Skårup, Skanderborg Kommune: Skanderborg Kommunes energikonverteringsindsats.
  - Mikkel Jungshoved, BL: EU SUPER-i projektet.
  - Jonas A. Johansen, EGC: Mentimeter spørskema-besvarelse.
- Energifællesskaber og solceller hvad kan man hvad kan ikke? v/Mikkel Jungshoved, BLs DriftsNet
- ESCO-finansiering af boligselskabers energirenoveringer eksempler på ESCO 2.0 v/Henrik Bielefeldt, Sustain
- Pause kaffe og netværk
- Termonet varmeforsyning uden for fjernvarmeområder og forsøgsprojekt med energilagring af solcellestrøm v/Henrik Bielefeldt, Sustain
- SUPER-i projektet udvikler på europæisk plan finansieringsløsninger for boligselskabers energiindsats, Paola Zerilli, York University
- Plenum-debat og frokost/sandwich
- Tak for i dag

Tilmelding til mpr@bl.dk - DET ER GRATIS AT DELTAGE - tilmeldingsfrist er 21. november 2023.

Det EU-finansierede SUPER-i-projekt har til formål at bidrage til at øge investeringer og dataindsamling om energieffektivitet i den almene boligsektor. Projektet vil støtte finansieringen af energirenoveringer gennem etablering af en direkte dialog mellem finansielle institutioner, private investorer og almene boligforeninger. Dette vil ske i relation til tre pilotprojekter i Danmark, Italien og Slovenien.

Super-I, H2020 contract no 101028220



