



CEESEN-BENDER

Final Publishable Report

Key Results, Lessons Learnt and Recommendations for the Future

LIFE22-CET-CEESEN-BENDER | 2026



About this report

Purpose, audience and project context

PUBLIC-FACING FINAL REPORT



This report summarises the key results, lessons learnt and future recommendations from CEESEN-BENDER. It is written for stakeholders working on building renovation, energy poverty and support services for vulnerable households.

MAIN MESSAGE



CEESEN-BENDER shows that socially fair building renovation depends on more than funding and technical measures. Reliable data, trusted advice, building-level facilitation, resident engagement and post-renovation guidance should be treated as core renovation infrastructure — not optional add-ons.

CEESEN-BENDER AT A GLANCE

Building intErventions in vulNerable Districts against Energy poveRty

	Grant agreement: LIFE22-CET-CEESEN-BENDER / LIFE 101120994
	Programme: LIFE Clean Energy Transition
	Period: September 2023 – August 2026
	Budget: 1.85 M€, including 1.75 M€ EU support
	Pilot countries: Croatia, Estonia, Poland, Romania and Slovenia
	ceesen.org/projects/ceesen-bender

CEESEN

CEESEN refers to the Central and Eastern European Sustainable Energy Network. CEESEN-BENDER builds on this cooperation context to support knowledge exchange, pilot learning and replication across Central and Eastern Europe. [Become a Member ↗](https://ceesen.org)

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TARGET AUDIENCE AND WHAT THEY SHOULD GET FROM THIS REPORT AND CEESEN-BENDER

	Policymakers and ministries	Lessons on energy poverty targeting, renovation grant design, data access and long-term renovation support.
	Municipalities and energy agencies	Replicable support models, communication formats and prioritisation approaches.
	Apartment associations and building managers	Practical insights on roadmaps, consultations, resident engagement and post-renovation guidance.
	Energy professionals and stakeholders	A concise synthesis of tested tools, training materials, results and future recommendations.

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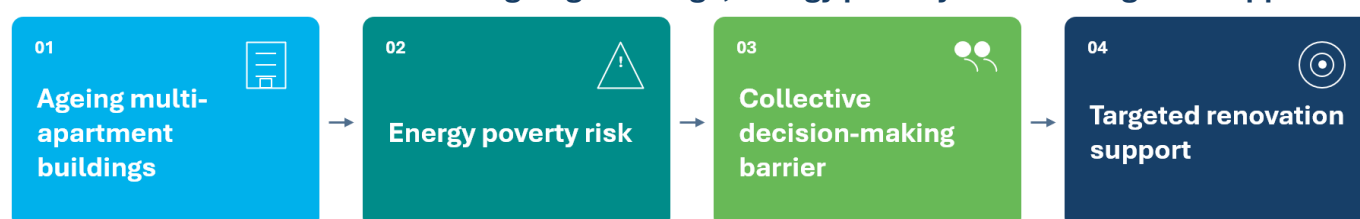
01 Why CEESEN-BENDER matters

Energy poverty, renovation barriers and the challenge of reaching vulnerable households

PROBLEM STATEMENT

Energy-poor households are rarely reached by renovation policy through technical measures alone. Support must combine data, trusted advice, building-level facilitation and financial tools that work in multi-apartment buildings.

How CEESEN-BENDER connects ageing buildings, energy poverty risk and targeted support



CONTEXT

Ageing building stock

Many post-war multi-apartment buildings in Central and Eastern Europe still need renovation, better indoor comfort and improved technical systems.

RISK

Energy poverty risk

Vulnerable households may face high energy costs, low comfort and limited capacity to take part in complex renovation decisions.

DECISION BARRIER

Collective decision-making

In multi-apartment buildings, individual households benefit only if the whole building can move through the decision, financing and renovation process.

SUPPORT NEEDED

Targeted support needed

Data-based prioritisation, advisory services and trusted communication formats help identify where support can create the greatest value.

02 Key results at a glance

CEESEN-BENDER targets and impacts

5 pilot areas across Croatia, Estonia, Poland, Romania and Slovenia	30 building-level roadmaps prepared for pilot buildings	4,230 people trained homeowners, landlords, building managers and other stakeholders
986 vulnerable and energy-poor homeowners reached through project activities	30+ energy professionals trained through the project	15 policy documents / briefs prepared during the project

ACHIEVEMENT 01

PRACTICAL SUPPORT

Roadmaps, home visits, workshops, Q&A sessions and demonstration visits helped turn renovation barriers into practical support for multi-apartment buildings.

ACHIEVEMENT 02

PEOPLE REACHED

CEESEN-BENDER engaged homeowners, landlords, building managers, vulnerable households, energy professionals and local stakeholders. Communication activities generated over **715,000** reported engagements.

ACHIEVEMENT 03

TOOLS AND IMPACT

Tools, training and policy recommendations supported renovation targeting, energy poverty identification and replication. Energy, climate and investment impacts are tracked through the project KPI framework.

FROM PROJECT TARGETS TO MEASURABLE IMPACT

PRIMARY ENERGY

7.63

GWh/year

FINAL ENERGY

6.29

GWh/year

RENEWABLE ENERGY

0.25

GWh/year

GHG REDUCTION

37.5

tCO₂eq/year

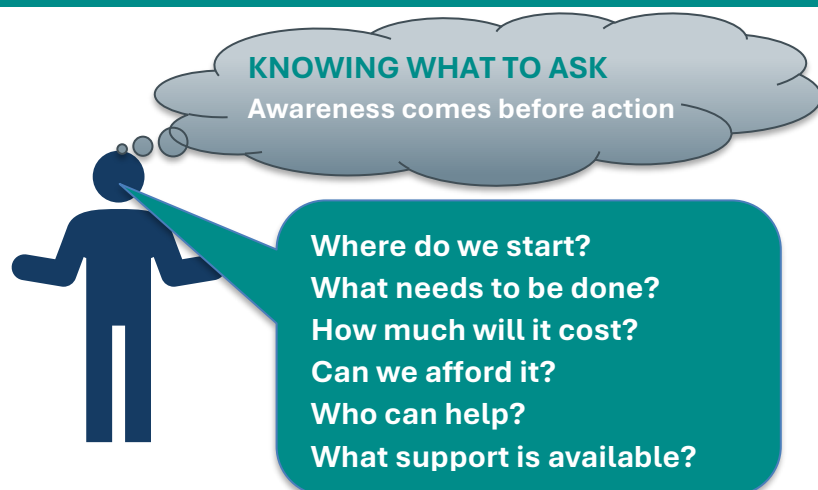
NEW INVESTMENTS

33.6

M€

03 Tools and methods tested in practice

A practical toolbox for renovation support and energy poverty targeting



TOOLBOX LOGIC

A TOOLBOX, NOT ONE SINGLE SOLUTION

CEESEN-BENDER tested a package of complementary tools rather than one single solution. Together, they form a practical support pathway: identifying renovation need, prioritising support, planning action, engaging residents, and assessing options.

WHAT THE TOOLBOX HELPS ANSWER

HOMEOWNERS AND TENANTS

Will it improve comfort — and can I afford it?

APARTMENT ASSOCIATIONS

What pathway is realistic for our building?

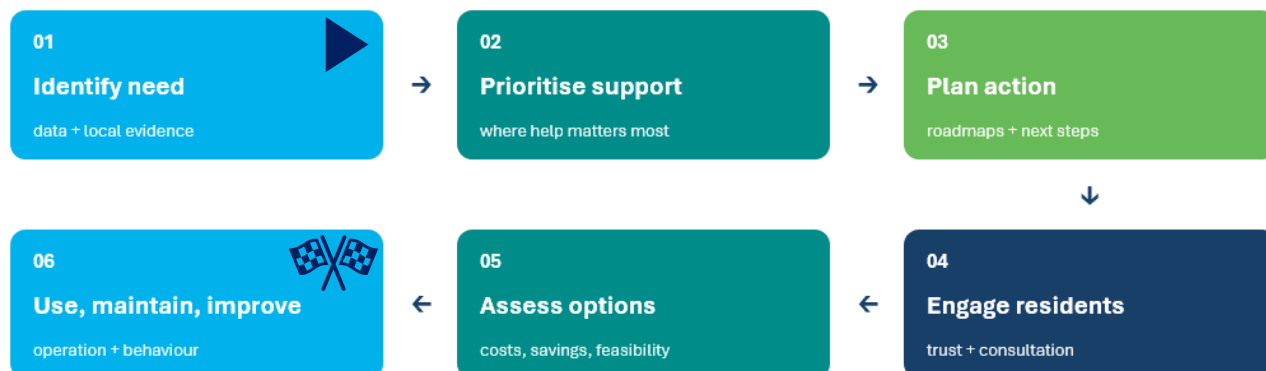
BUILDING MANAGERS AND CONSULTANTS

How do we explain costs, benefits and works clearly?

MUNICIPALITIES AND MINISTRIES

Where is targeted support needed first?

CEESEN-BENDER SUPPORT PATHWAY



TOOLS BEHIND THE PATHWAY

PLANNING Pilot area roadmaps	BUILDING Building-level roadmaps	ENGAGEMENT Home visits and consultations
DATA Resident survey and digital prioritisation tool	FINANCE Renovation Return on Investment (ROI) calculator	CAPACITY Training and resident support materials

03.1 Planning and resident support

From area-level priorities to building-level decisions and household engagement

FROM STRATEGY TO PEOPLE

Support starts on site

Renovation support often fails when strategic plans do not reach the people who must make building-level decisions. CEESEN-BENDER tested how area-level priorities can be translated into building-specific guidance, resident engagement and practical advice.

01 PILOT AREA ROADMAPS

PURPOSE

Set a shared local renovation direction.

TESTED

Area-level needs, stakeholders and possible actions.

LESSON

Translate evidence into clear next steps and responsible actors.



02 BUILDING-LEVEL ROADMAPS

PURPOSE

Define realistic renovation pathways.

TESTED

Building-specific barriers, guidance and next steps.

LESSON

Connect guidance with financing options.



03 HOME VISITS AND CONSULTATIONS

PURPOSE

Reach households directly.

TESTED

Tailored advice and practical guidance.

LESSON

Trust matters where costs and uncertainty block progress.



04 COMMUNICATION BETWEEN MANAGERS AND HOMEOWNERS

PURPOSE

Make renovation understandable.

TESTED

Guidance for managers, associations and residents.

LESSON

Repeat communication at several stages.



FROM ROADMAPS TO ON-SITE SUPPORT



Photos: TREAS

Public advice, demonstration visits and home consultations helped turn renovation planning into practical support

03.2 Data, resident evidence and technical assessment

Using survey evidence, prioritisation, cost-benefit logic and monitoring to support better decisions

EVIDENCE NEEDS CONTEXT

Data, survey evidence, monitoring and calculation tools helped make renovation needs, resident experiences and expected impacts visible. They are most useful when combined with local knowledge, building-level experience and realistic cost assumptions.

EVIDENCE AND DECISION-SUPPORT TOOLS

 RESIDENT EVIDENCE BASE Renovated and unrenovated buildings compared	2,034 survey participants 5 pilot sites
What residents reported Renovated buildings generally showed fewer reported building defects, better perceived energy efficiency and improved winter comfort. However, affordability pressures, summer comfort issues and limited involvement in building-level decisions remained important.	What this means Renovation benefits are not only technical. Resident evidence helps show how renovation affects comfort, affordability, participation and quality of life — but results should be interpreted as descriptive evidence, not causal proof.

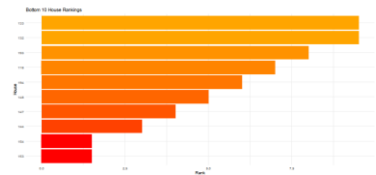
Digital energy poverty prioritisation tool

Purpose: identify buildings where energy poverty and renovation need may overlap.

Tested: a data-based ranking approach validated against field knowledge.

Lesson: digital tools need local validation and good-quality data.

Houses which require renovation first – lowest rank score



Return on Investment (ROI) calculator

Purpose: support early comparison of renovation options, costs, savings and payback assumptions.

Tested: input-based calculation and renovation scenarios.

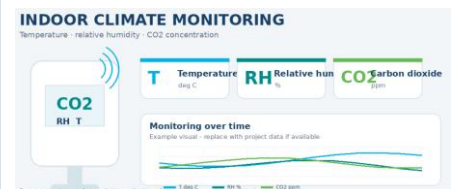
Lesson: results depend strongly on input quality and local cost assumptions.

Indoor climate monitoring

Purpose: make comfort and air-quality benefits visible beyond energy savings.

Tested: monitoring and communication of indoor climate evidence.

Lesson: evidence supports resident communication, but robust conclusions need sufficient samples and context.



Demonstration buildings

Purpose: show renovation processes and practical results in real buildings.

Tested: demonstration cases and communication formats.

Lesson: demonstrations make renovation tangible, but lessons need careful framing across contexts.

03.3 Capacity and support materials

Training, behavioural guidance and correct post-renovation use

THE HUMAN SIDE OF RENOVATION SUPPORT

Renovation support is not only about plans, calculations or one-off advice. CEESEN-BENDER also tested the advisory capacity and resident materials needed around technical tools: training for advisers, practical guidance for residents and follow-up support that helps people use, maintain and benefit from renovation measures.

CAPACITY AND MATERIALS THAT HELP RESIDENTS ACT

TRAINING MATERIALS FOR WORKING WITH VULNERABLE HOUSEHOLDS

Training materials helped energy professionals communicate more clearly with residents in vulnerable situations. The focus was on adult learning, behavioural change, advisory communication and one-stop-shop-style support.

Main lesson:

technical expertise must be paired with empathy, clarity and trust.

PROMOTIONAL AND BEHAVIOURAL MATERIALS

Posters, leaflets, checklists and practical guidance translated renovation and energy-saving advice into everyday actions. The materials covered everyday energy behaviour, living in renovated buildings, correct use of ventilation and heating systems, summer comfort, moisture prevention and the importance of maintenance.

Main lesson: renovation benefits depend not only on technical works, but also on how residents use and maintain the building.



Examples of resident-facing materials prepared to support energy-saving behaviour, correct use of renovated buildings and everyday maintenance awareness.

MAKING THE SUPPORT PATHWAY WORK IN PRACTICE



Training and resident guidance strengthen the wider support pathway shown in **Section 03**. Used together with roadmaps, resident engagement, survey evidence, prioritisation, renovation ROI logic and monitoring, they help turn information into practical support, better everyday use and follow-up action.

04 Main lessons learnt

What CEESEN-BENDER showed about socially fair renovation support

CORE LESSON

Technical renovation measures are necessary, but the most difficult barriers are often organisational, financial and social. Renovation support must therefore combine engineering knowledge with trust-building, facilitation, financial clarity and practical advice.

LESSON 01

Targeting requires combined evidence

Energy-poor households are difficult to identify using one data source alone. Building condition, energy use, socio-economic indicators, resident experience and local knowledge need to be combined.

LESSON 02

Renovation is a whole-building process

Vulnerable households can benefit only if their apartment building can move through collective decision-making, financing and implementation.

LESSON 03

Predictability matters

Unpredictable grant schedules create uncertainty for apartment associations, peaks in demand for consultants and pressure on construction markets.

LESSON 04

Awareness events are not enough

General events can raise visibility, but vulnerable households often need discreet one-to-one contact, repeated communication and trusted intermediaries. Communication should focus on healthier homes, lower bills and better living conditions rather than labelling people as energy poor.

LESSON 05

Direct advice creates practical value

Home visits and personal consultations can reveal affordability concerns, technical misunderstandings and behavioural issues that do not appear in desk-based data.

LESSON 06

Post-renovation guidance is essential

Residents and building managers need guidance on new ventilation, heating and automation systems to achieve expected comfort and energy benefits.

LESSON 07

Engagement takes time

Working with vulnerable households is slower than standard project planning often assumes. Home visits, trust-building conversations and follow-up support need time buffers and should be planned as part of the renovation support process.

LESSON 08

Trust and intermediaries matter

Independent advice is important, but residents are more likely to engage when information comes through people or institutions they already trust, such as building managers, local authorities, social services, neighbours or community organisations.

PRACTICAL LESSON

The most transferable lesson is that renovation support must be designed around how collective decisions are actually made in multi-apartment buildings.

05 Recommendations for the future

Policy and practice messages for renovation support

RECOMMENDATION LOGIC

Future renovation support should combine long-term financing, data-based targeting, trusted advisory services and post-renovation guidance. These elements should be planned together, not treated as separate add-ons.

RECOMMENDATION 01

Make support predictable

Plan renovation support schemes in advance and communicate grant schedules, eligibility rules and funding conditions clearly. Predictable support helps apartment associations prepare earlier, reduces pressure on advisers and makes renovation markets more stable.

RECOMMENDATION 02

Link renovation and energy poverty policy

Renovation schemes should include targeted support for vulnerable and low-income households, including reduced co-financing requirements where needed. Energy poverty indicators and support mechanisms should be connected with renovation funding.

RECOMMENDATION 03

Enable secure data-based targeting

Improve access to building, energy and socio-economic data with clear safeguards. Better data helps municipalities and support organisations focus outreach where it is most relevant.

RECOMMENDATION 04

Fund advisory services

Finance one-stop-shop models, home visits, technical advice and building-level facilitation. Advisory capacity helps apartment associations move from interest to decision.

RECOMMENDATION 05

Support non-standard buildings

Create tailored support for smaller, wooden, heritage or protected buildings. Buildings outside standard renovation schemes should not be left behind.

RECOMMENDATION 06

Plan post-renovation guidance

Residents and building managers need training on heating, ventilation and automation systems. Correct use and maintenance help secure comfort, indoor climate and energy benefits.

RECOMMENDATION 07

Build local and market capacity

Invest in training for building managers, municipalities, energy advisers and renovation professionals. Stronger local capacity, peer learning and a more stable renovation market help reduce bottlenecks during grant preparation and implementation.

RECOMMENDATION 08

Simplify procedures and responsibilities

Reduce administrative burden and clarify roles for apartment associations, municipalities, advisers and funding bodies. Fewer projects will stop because the process is too complex.

PRACTICAL IMPLICATION

Renovation policies should not assume that apartment associations can manage technical, financial and social complexity alone. Support systems should be designed around the real capacity of building-level decision-makers.

06 Replication potential

What can be transferred to other municipalities, regions and energy agencies

Replication potential depends less on copying tools exactly and more on adapting them to local buildings, data, institutions and advisory capacity. The most transferable CEESEN-BENDER elements are those that combine evidence, resident engagement and practical support.

01 DATA-BASED TARGETING AND PRIORITISATION

Can be replicated in

Municipalities, regions, energy agencies and programme managers.

Conditions needed

Reliable building, energy and socio-economic indicators; transparent scoring; resident evidence where available; local validation.

Value: Helps target support where renovation need, energy poverty risk and practical renovation potential overlap.

02 PILOT AREA AND BUILDING-LEVEL ROADMAPS

Can be replicated in

Municipalities, apartment associations, building managers and advisory organisations.

Conditions needed

Basic building data, understanding of local barriers, renovation scenarios and links to financing opportunities.

Value: Turns broad renovation ambition into practical next steps for areas, buildings and decision-makers.

03 HOME VISITS AND DIRECT CONSULTATIONS

Can be replicated in

Municipalities, one-stop-shops, NGOs, energy agencies and local support services.

Conditions needed

Trusted advisers, clear referral pathways, time for direct engagement and capacity to follow up.

Value: Reaches households and apartment associations that general campaigns may miss.

04 COMMUNICATION BETWEEN MANAGERS AND HOMEOWNERS

Can be replicated in

Apartment associations, building management services and renovation support programmes.

Conditions needed

Simple guidance, repeated communication and materials adapted to local decision-making processes.

Value: Helps make renovation understandable before, during and after building-level decisions.

05 RENOVATION ROI AND OPTION-ASSESSMENT

Can be replicated in

Energy agencies, programme managers, municipalities and advisory services.

Conditions needed

Reliable cost assumptions, energy data, renovation scenarios and careful explanation of uncertainty.

Value: Supports early discussion of costs, savings, payback and realistic renovation options.

06 TRAINING AND RESIDENT SUPPORT MATERIALS

Can be replicated in

Energy agencies, municipalities, professional networks and advisory services.

Conditions needed

Adaptation to local language, building systems, institutional context and resident concerns.

Value: Improves the quality of advice and helps residents use renovated buildings correctly after renovation.

Additional elements such as indoor **climate and air-quality monitoring**, **study visits**, **online material libraries** and **renewable-energy pre-screening** can also be replicated where local capacity, data, technical conditions and public access to materials allow.

07 What next

Target better, support longer, replicate smarter

CEESEN-BENDER has tested a practical support pathway that can now be adapted by municipalities, energy agencies and renovation support services: from targeting and advice to building-level decisions, implementation and post-renovation use.

NEXT 01

Target better

Use combined data and local validation to identify where renovation support can reduce energy poverty risk, improve comfort and unlock realistic building-level action.

NEXT 02

Support longer

Design advisory services that accompany apartment associations and households through the full renovation journey: early awareness, decision-making, financing, implementation and post-renovation use. Trusted intermediaries should be part of this support chain.

NEXT 03

Replicate smarter

Adapt tools and methods to local institutional, financial and building contexts instead of copying them mechanically. Replication should start from local needs, available data and advisory capacity.

FINAL MESSAGE

CEESEN-BENDER shows that socially fair building renovation depends on more than funding and technical measures. Reliable data, trusted advice, building-level facilitation, resident engagement and post-renovation guidance should be treated as core renovation infrastructure — not optional add-ons.

EXPLORE THE OUTPUTS AND TOOLS

The next page provides direct links to selected CEESEN-BENDER reports, tools, materials and the final conference recording. Further project information and additional public outputs are available through the CEESEN-BENDER project page.

08 Key project outputs and tools

Explore the reports, tools and materials developed by CEESEN-BENDER

CEESEN-BENDER PROJECT OUTPUTS HUB

The links below provide direct access to selected public reports, tools, training materials, communication resources and the final conference recording. Further project information and additional public materials are available through the CEESEN-BENDER project page.



OPEN CEESEN-BENDER PROJECT PAGE

ceesen.org/projects/ceesen-bender



Scan to open the project page

PILOT AREA ROADMAPS	Area-level renovation priorities and next steps for the five pilot areas.	OPEN
BUILDING-LEVEL ROADMAPS	Building-specific renovation pathways and investment logic for pilot buildings.	OPEN
DIGITAL PRIORITISATION TOOL	Data-based support for identifying buildings where renovation need and energy poverty risk may overlap.	OPEN
RENOVATION ROI CALCULATOR	Tool for comparing renovation options, costs, savings and payback assumptions.	OPEN
RESIDENT SURVEY RESULTS	Evidence from residents of renovated and unrenovated buildings on comfort, affordability and energy poverty.	OPEN
TRAINING MATERIALS	Materials for advisers and professionals consulting vulnerable households.	OPEN
COMMUNICATION GUIDELINES	Guidance for building managers and homeowners throughout the renovation process.	OPEN
DEMONSTRATION BUILDINGS	Practical observations and examples from demonstration buildings.	OPEN
RESIDENT SUPPORT MATERIALS	Posters, leaflets and tips for energy-saving behaviour and post-renovation use.	OPEN
LESSONS LEARNT AND POLICY RECOMMENDATIONS	Project lessons and recommendations for national and EU-level policymakers.	OPEN

SHARING THE RESULTS:

CEESEN-BENDER Final Conference



WATCH THE CONFERENCE RECORDING

ceesen.org/bender-final-conference-2026

On 14 May 2026 in Zagreb, CEESEN-BENDER presented its key results, tools and policy lessons at the conference. More than 350 participants and online viewers followed the event, which focused on socially fair renovation, energy poverty and practical support for multi-apartment buildings.



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