CEESEN-BENDER

Building intErventions in vulNerable Districts against Energy poveRty

Deliverable 6.1

Promotional materials to improve the residents' energy behaviour

Dissemination Level: Public

WP6. Promotional materials to improve the residents' energy behaviour

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Background of the CEESEN-BENDER project

The main goal of the project "Building intErventions in vulNerable Districts against Energy poveRty" (i.e. CEESEN-BENDER), launched on September 1 2023, is **to empower and support vulnerable homeowners and tenants living in buildings built after the Second World War and before 1990's in 5 CEE countries**: Croatia, Slovenia, Estonia, Poland, and Romania. The project will help them through the renovation process by identifying the main obstacles and creating trustworthy support services that include homeowners, their associations, and building managers.

Coordinated by Society for Sustainable Development Design (DOOR), the project CEESEN-BENDER brings together leading European researchers and experts in field from six countries: **Croatia** (Society for Sustainable Development Design / DOOR, Medjimurje Energy Agency Ltd. / MENEA, EUROLAND Ltd. / Euroland, GP STANORAD Ltd. / GP STANORAD), **Estonia** (University of Tartu / UTARTU, Tartu Regional Energy Agency / TREA, The Estonian Union of Co-operative Housing Associations / EKYL), **Slovenia** (Local Energy Agency Spodnje Podravje / LEASP), **Romania** (Alba Local Energy Agency / ALEA, Municipality of Alba Iulia / ALBA IULIA), **Poland** (Mazovia Energy Agency / MAE, Housing Cooperative Warszawska Spółdzielnia Mieszkaniowa - The Warsaw Housing Cooperative / WSM), **Germany** (Climate Alliance) in addition to **Central Eastern European Sustainable Energy Network** (CEESEN).

The project CEESEN-BENDER is carried out from September 2023 until August 2026 and has a total budget of €1,85 million, of which €1,75 million is funded from the European Union's Programme for the Environment and Climate Action (LIFE 2021-2027) under grant agreement n° LIFE 101120994.

As stated, the **main objective** of CEESEN-BENDER is to empower and support vulnerable homeowners and renters living in multi-apartment buildings (MABs) through the renovation process by identifying the main obstacles, and creating trustworthy support services that include homeowners, their associations, and building managers.

Therefore, the **detailed objectives** for CEESEN-BENDER are stated below:

- The project will analyse the ownership structure and physical characteristics of buildings in the pilot sites in targeted regions to comprehensively understand the obstacles that impede or halt homeowner associations, landlords, and property managers from pursuing energy renovations.
- Project partners will identify both legislation and financial, and technical administrative obstacles for the renovation in pilot countries. The identification of obstacles from the homeowners' perspective will help the creation of tailor-made solutions not only for homeowners but also for building managers, landlords, municipalities and other relevant stakeholders involved in the renovation process.
- Through the project, methods and tools that can be used to address different aspects of energy poverty will be developed. This includes:

  - Data gathering on energy poverty in the pilot sites;
  - A digital tool identifying buildings with high levels of energy poor households in the greatest need of renovation.
  - A model of potential savings in buildings undergoing renovation, and a tool for calculating the return on investment for energy renovations.

- 5 Pilot area roadmaps will be developed that prioritize building renovation based on their potential for maximizing emissions reduction via energy savings as well as an increase of quality of life and wellbeing for vulnerable homeowners.

- Within the 5 pilot areas, at least 30 building-level roadmaps will be created that specify the technical details for renovations. These pilot buildings will be supported in the entire pre-construction phase, drawing of plans, applying for permits, audits or other requirements and for financing. Plans will call for the decarbonization of the heating and cooling supply and integration of renewable energy sources (RES), to produce energy to cover its own consumption.

- Also, a support system for homeowners, municipalities, and other large owners of multiapartment buildings (MABs) in targeted regions will be created to speed up the renovation process, by:
  - Advising at least 3.500 homeowners, landlords and building managers on legal, financial, technical and other aspects of energy renovations.
  - Advocating for changes of regulatory requirements and policies to lower the costs and time needed for the preparatory phase of projects.
  - Train at least 30 energy professionals on energy poverty and related topics.

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Executive Summary

Within the CEESEN-BENDER project, improving the energy behaviour of residents is an important part of supporting building renovation, reducing energy poverty and improving living conditions in vulnerable multi-apartment buildings. Technical renovation measures alone are not always sufficient to achieve the expected energy savings or indoor climate improvements. Residents also need clear, practical and accessible information on how everyday choices and habits affect energy consumption, comfort and costs.

This deliverable presents the promotional and awareness-raising materials developed under Work Package 6 to support better energy behaviour among residents. The materials are designed to communicate practical energy-saving advice in a simple and visual way and to support project partners in their communication with residents, apartment associations, building managers, municipalities and other local stakeholders.

The deliverable includes three main types of materials. First, an energy-saving recommendations list provides practical household-level recommendations related to heating, ventilation, electricity use, kitchen appliances, refrigeration, laundry and other everyday activities. Second, a set of social media posters presents short and visually engaging energy-saving messages that can be used by project partners in online communication and awareness campaigns. Third, a leaflet on living in a renovated building provides guidance for residents on how to use renovated buildings properly, including issues such as ventilation, indoor temperature, humidity, window opening and the correct use of technical systems.

The materials are also intended to support the broader Task 6.1 activities, including resident advice, workshops, home visits, apartment association meetings, community engagement and follow-up communication after renovation.

The materials have been developed with a focus on clear language, visual communication and practical usability. They are intended to be easy to understand for non-technical audiences and suitable for use in different local contexts. The materials can be shared through project websites, partner communication channels, social media, apartment association meetings, resident consultations, home visits, workshops and other engagement activities.

By providing practical and reusable communication materials, this deliverable contributes to the wider objectives of CEESEN-BENDER: empowering residents, supporting vulnerable households, improving awareness of energy efficiency and helping renovation measures deliver long-term benefits in terms of energy savings, comfort and quality of life.

1. Relevance of this Deliverable

The relevance of this deliverable, Deliverable 6.1 – Promotional materials to improve the residents' energy behaviour, lies in its role within the CEESEN-BENDER project's broader objective of empowering vulnerable homeowners and tenants in multi-apartment buildings and supporting them in reducing energy consumption, improving comfort and addressing energy poverty.

While several project activities focus on renovation planning, technical support and financial barriers, this deliverable addresses the behavioural and communication dimension of energy efficiency. Building renovation and technical measures can only deliver their full benefits when residents understand how their everyday habits, use of heating and ventilation systems, appliance choices and indoor climate practices affect energy consumption, costs and comfort.

The promotional materials developed under this deliverable provide practical, accessible and reusable communication tools for residents, apartment associations, building managers, municipalities and other local stakeholders. They translate energy efficiency and renovation-related topics into simple, visual and user-friendly messages that can be used in awareness-raising activities, resident consultations, home visits, apartment association meetings, social media campaigns and other project communication channels.

By supporting better energy behaviour and improving residents' understanding of energy use in both renovated and non-renovated buildings, this deliverable contributes to the wider CEESEN-BENDER objectives of reducing energy poverty, improving quality of life and strengthening the long-term impact of building renovation activities in vulnerable districts.

This deliverable directly responds to the D6.1 description by providing promotional materials for vulnerable households in clear, easy-to-understand and visually attractive formats. The materials are suitable for both online and printed use and are prepared to support dissemination in English and project partner languages. At the same time, they support the broader objectives of Task 6.1 by serving as practical tools for advice, consultations, workshops, home visits, community engagement activities and communication with residents, building managers and apartment associations.

2. Introduction

This deliverable presents the promotional and awareness-raising materials developed within Work Package 6 of the CEESEN-BENDER project to support improved energy behaviour among residents. The materials are intended to help residents better understand how everyday choices related to heating, ventilation, electricity use and the operation of building systems can influence energy consumption, indoor comfort and household costs.

The materials were developed to be practical and easy to use by project partners in different local contexts. The focus is on simple behavioural recommendations and clear visual communication rather than detailed technical explanations. This approach is

especially relevant for residents of multi-apartment buildings, where energy performance depends not only on renovation measures and building systems, but also on how residents use and manage their homes on a daily basis.

Three main types of promotional materials were prepared under this deliverable. The first is an energy-saving recommendations list, which provides practical household-level advice on reducing energy use and improving comfort. The second is a set of energy-saving recommendation posters, designed mainly for social media and online communication, but also suitable for printed use where relevant. The third is a leaflet on living in a renovated building, which explains how residents can use renovated buildings and their technical systems in a way that supports energy savings and good indoor climate. The material can also be used as an information poster where relevant.

An overview of the materials developed under this deliverable is provided below.

Material	Format	Main purpose	Main use
Energy-saving recommendations list	Printable and digital document	Practical household-level energy-saving advice	Events, resident meetings, home visits and consultations
Energy-saving recommendation posters	Social media visuals and printable posters	Visual awareness-raising and promotion of the recommendations list	Social media, websites, newsletters, events and information stands
Living in a renovated building leaflet	Leaflet, poster or information sheet	Guidance on behaviour in renovated buildings	Resident meetings, follow-up consultations and common areas of renovated buildings

The following sections describe each of these materials in more detail, including their purpose, main content and intended use. Visual previews of the materials are included in Section 3. Final dissemination versions of the materials are provided separately in PDF and/or PNG format, where relevant, to support their use in communication and awareness-raising activities.

2.1. Target groups

The promotional and awareness-raising materials developed under this deliverable are primarily intended for residents and homeowners living in multi-apartment buildings, including buildings that are already renovated, undergoing renovation or preparing for future renovation. The materials are also relevant for apartment associations and building managers, who play an important role in communicating with residents and supporting the correct use of building systems.

In addition, the materials can be used by municipalities, local authorities, energy advisors, renovation consultants and other local stakeholders involved in energy efficiency, building renovation and resident engagement activities. Where relevant, they can also support communication with vulnerable and energy-poor households by providing clear, practical and easy-to-understand advice on reducing energy use and improving comfort.

2.2. Development basis and behavioural approach

The promotional materials were developed based on knowledge generated within the CEESEN-BENDER project and the previous experience of project partners in energy poverty, energy efficiency, building renovation and resident engagement. The content reflects practical issues identified through project activities, including consultations with homeowners and building managers, awareness-raising activities, stakeholder engagement and renovation support services.

The materials focus on clear and practical recommendations that can be understood by non-technical audiences and applied in everyday life without requiring significant financial investment. This is particularly relevant for vulnerable households, where accessible information and small behavioural changes can support improved comfort and reduce unnecessary energy use.

The materials developed under D6.1 also connect to other project activities. They build on awareness-raising and communication activities (WP2), the analysis of renovation and behavioural barriers faced by residents and vulnerable households (WP3), training and capacity-building activities for energy professionals and project partners (WP4), and resident consultations and renovation support activities carried out in pilot buildings (WP5). In WP6, these inputs are translated into practical communication materials that can be used during consultations, workshops, home visits, local events and follow-up communication with residents.

The materials were designed not only to provide information, but also to support practical behavioural change. The recommendations list provides guidance for daily household behaviour, the posters support repeated exposure to key messages, and the leaflet/poster on living in a renovated building reinforces correct behaviour after renovation works have been completed. Together, these materials help project partners communicate consistent energy-saving messages and support longer-term improvements in residents' energy behaviour.

3. Promotional materials developed under D6.1

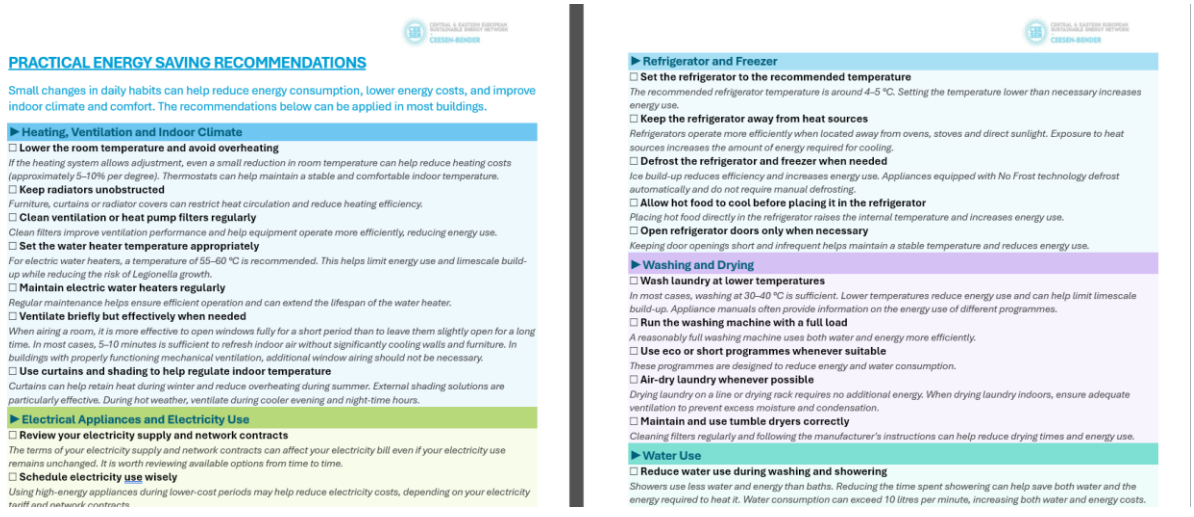
This section presents the promotional and awareness-raising materials developed to improve residents' energy behaviour within the CEESEN-BENDER project. The materials are intended to support practical communication with residents, apartment associations, building managers and other local stakeholders. They focus on simple, understandable and visually accessible messages that can help residents reduce energy consumption, improve indoor comfort and better understand the role of everyday behaviour in achieving energy savings.

Three types of materials were prepared: an energy-saving recommendations list, energy-saving recommendation posters, and a leaflet on living in a renovated building. Together, these materials provide both practical household-level advice and visual communication tools that can be used in different engagement and dissemination activities.

3.1. Energy-saving recommendations list

The energy-saving recommendations list is a practical material that can be shared directly with residents. It is intended for use at project events, apartment association meetings, resident consultations, home visits and other engagement activities where practical household-level energy advice is needed.

The list provides simple and concrete recommendations on how residents can reduce energy consumption through everyday behaviour and low-cost actions. The recommendations cover topics such as heating, ventilation, electricity use, kitchen appliances, refrigeration, laundry and other daily activities that influence household energy use and comfort.



PRACTICAL ENERGY SAVING RECOMMENDATIONS

Small changes in daily habits can help reduce energy consumption, lower energy costs, and improve indoor climate and comfort. The recommendations below can be applied in most buildings.

▶ Heating, Ventilation and Indoor Climate

☐ Lower the room temperature and avoid overheating
If the heating system allows adjustment, even a small reduction in room temperature can help reduce heating costs (approximately 5–10% per degree). Thermostats can help maintain a stable and comfortable indoor temperature.

☐ Keep radiators unobstructed
Furniture, curtains or radiator covers can restrict heat circulation and reduce heating efficiency.

☐ Clean ventilation or heat pump filters regularly
Clean filters improve ventilation performance and help equipment operate more efficiently, reducing energy use.

☐ Set the water heater temperature appropriately
For electric water heaters, a temperature of 55–60 °C is recommended. This helps limit energy use and limescale build-up while reducing the risk of Legionella growth.

☐ Maintain electric water heaters regularly
Regular maintenance helps ensure efficient operation and can extend the lifespan of the water heater.

☐ Ventilate briefly but effectively when needed
When airing a room, it is more effective to open windows fully for a short period than to leave them slightly open for a long time. In most cases, 5–10 minutes is sufficient to refresh indoor air without significantly cooling walls and furniture. In buildings with properly functioning mechanical ventilation, additional window airing should not be necessary.

☐ Use curtains and shading to help regulate indoor temperature
Curtains can help retain heat during winter and reduce overheating during summer. External shading solutions are particularly effective. During hot weather, ventilate during cooler evening and night-time hours.

▶ Electrical Appliances and Electricity Use

☐ Review your electricity supply and network contracts
The terms of your electricity supply and network contracts can affect your electricity bill even if your electricity use remains unchanged. It is worth reviewing available options from time to time.

☐ Schedule electricity use wisely
Using high-energy appliances during lower-cost periods may help reduce electricity costs, depending on your electricity

▶ Refrigerator and Freezer

☐ Set the refrigerator to the recommended temperature
The recommended refrigerator temperature is around 4–5 °C. Setting the temperature lower than necessary increases energy use.

☐ Keep the refrigerator away from heat sources
Refrigerators operate more efficiently when located away from ovens, stoves and direct sunlight. Exposure to heat sources increases the amount of energy required for cooling.

☐ Defrost the refrigerator and freezer when needed
Ice build-up reduces efficiency and increases energy use. Appliances equipped with No Frost technology defrost automatically and do not require manual defrosting.

☐ Allow hot food to cool before placing it in the refrigerator
Placing hot food directly in the refrigerator raises the internal temperature and increases energy use.

☐ Open refrigerator doors only when necessary
Keeping door openings short and infrequent helps maintain a stable temperature and reduces energy use.

▶ Washing and Drying

☐ Wash laundry at lower temperatures
In most cases, washing at 30–40 °C is sufficient. Lower temperatures reduce energy use and can help limit limescale build-up. Appliance manuals often provide information on the energy use of different programmes.

☐ Run the washing machine with a full load
A reasonably full washing machine uses both water and energy more efficiently.

☐ Use eco or short programmes whenever suitable
These programmes are designed to reduce energy and water consumption.

☐ Air-dry laundry whenever possible
Drying laundry on a line or drying rack requires no additional energy. When drying laundry indoors, ensure adequate ventilation to prevent excess moisture and condensation.

☐ Maintain and use tumble dryers correctly
Cleaning filters regularly and following the manufacturer's instructions can help reduce drying times and energy use.

▶ Water Use

☐ Reduce water use during washing and showering
Showers use less water and energy than baths. Reducing the time spent showering can help save both water and the energy required to heat it. Water consumption can exceed 10 litres per minute, increasing both water and energy costs.

Figure 1. Preview of the energy-saving recommendations list

The material is designed to be easy to understand for non-technical audiences and suitable for direct distribution to residents. Its purpose is not to provide detailed technical guidance, but to offer practical advice that residents can apply in their homes. The recommendations list can also serve as supporting material for advisors, project partners and local stakeholders when explaining energy-saving opportunities to residents.

3.2. Energy-saving recommendation posters

The energy-saving recommendation posters are visual awareness-raising materials developed mainly for social media and online communication. They present selected energy-saving messages in a short, simple and visually engaging format.

Figure 2. Examples of energy-saving recommendation posters

The posters are intended to draw attention to the wider energy-saving recommendations list and encourage residents to learn more about practical ways to reduce energy use. They can be used on partner social media channels, project websites, newsletters and other digital communication platforms. Where relevant, the posters can also be printed and used at events, meetings, information stands or in other physical communication settings.

By presenting energy-saving recommendations in a more visual and easily shareable format, the posters help increase the visibility of the CEESEN-BENDER project and support wider awareness-raising among residents and local stakeholders.

3.3. Living in a renovated building leaflet

The leaflet on living in a renovated building provides guidance for residents on how to use a renovated building and its technical systems properly. Renovation can significantly improve energy performance and indoor comfort, but the actual results also depend on how residents use heating, ventilation, windows and other building systems after renovation.

The leaflet explains practical aspects such as maintaining suitable indoor temperatures, using ventilation correctly, avoiding excessive window opening during the heating season, managing humidity and understanding the importance of user behaviour in renovated buildings.

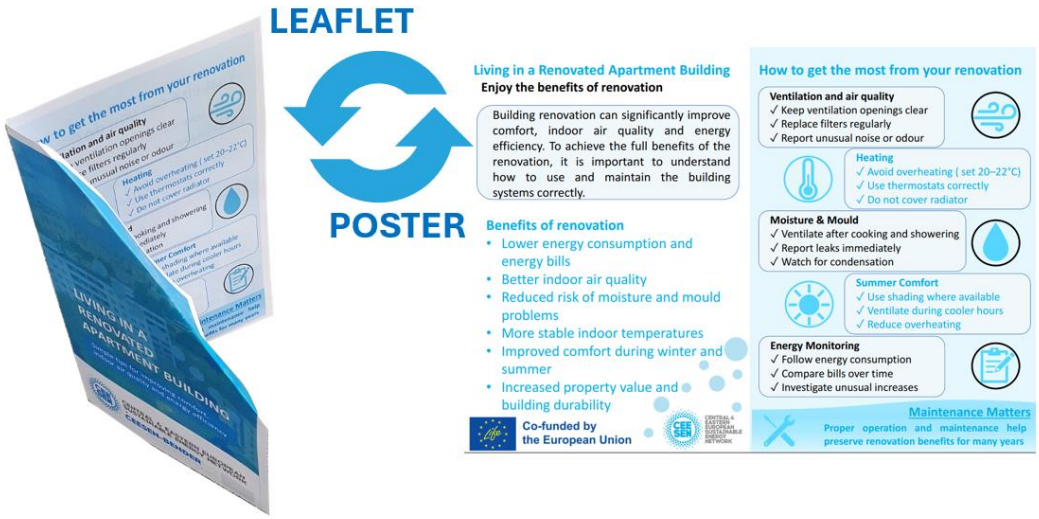


Figure 3. Preview of the "Living in a renovated building" leaflet/poster

The material is intended for residents, apartment associations and building managers after renovation works have been completed. It was designed to serve two practical communication functions. First, it can be distributed as a leaflet during resident meetings, consultations and follow-up activities after renovation. Second, it can be used as a poster or information sheet displayed in common areas of renovated buildings, for example on notice boards, stairwells or other shared spaces where residents can regularly see the guidance.

By supporting residents in adapting their behaviour to renovated buildings, the leaflet helps ensure that renovation measures deliver their expected long-term benefits in terms of energy savings, indoor climate and comfort.

4. Design, language and localisation approach

The promotional materials were developed with a focus on practical usability, clear language and visual communication. The aim was to make energy-saving and renovation-related guidance understandable for non-technical audiences, including residents who may not be familiar with energy efficiency terminology or building systems.

The materials use short explanations, concrete recommendations and visual elements to support easy understanding and wider use in communication activities. This allows project partners to use the materials in different settings, including resident meetings, home visits, online communication, social media campaigns and printed information materials.

The materials were prepared in editable formats to support translation, localisation and further adaptation by project partners. The energy-saving recommendations list was prepared in Word, while the posters and the "Living in a renovated building" leaflet/poster were prepared in PowerPoint. This makes it possible for partners to adjust wording, language versions and visual elements according to national and local

communication needs, while keeping the main messages consistent across the CEESEN-BENDER project.

The materials also follow the project's communication requirements, including the use of project branding and references to EU/LIFE funding where relevant.

The editable format also allows the materials to be refined during and after project implementation. Based on feedback from residents, building managers, local stakeholders and project partners, examples, wording and visual elements can be adjusted while maintaining the common project identity and core behavioural messages.

5. Use, dissemination and future adaptation of the materials

The materials developed under this deliverable are intended for use in both digital and printed formats. The final dissemination files are provided in PDF and/or PNG format, where relevant, so that they can be shared through project and partner websites, social media channels, newsletters and other online communication platforms.

The materials can also be used during project events, apartment association meetings, resident consultations, home visits, workshops and information stands. The recommendations list is suitable for direct distribution to residents, while the posters are especially suitable for online awareness-raising and short visual communication.

The leaflet on living in a renovated building can be used after renovation works have been completed, for example during follow-up meetings with residents or as an information sheet displayed in common areas of renovated buildings. This supports the long-term use of renovation results and helps residents understand how to operate renovated buildings in a way that maintains energy savings and good indoor climate.

By making the materials reusable and adaptable, the deliverable supports continued awareness-raising and resident engagement beyond individual project activities.

The examples below illustrate how the materials can support both local resident engagement activities and wider CEESEN-BENDER project communication. The materials may be used in digital and printed formats, including through project and partner communication channels, local events, consultations, home visits and follow-up activities in renovated buildings.

Activity / channel	Relevant material	Intended use
Resident workshops and local events	Energy-saving recommendations list; posters	Supporting discussion on practical energy-saving actions and drawing attention to key messages during events
Home visits and consultations	Energy-saving recommendations list	Providing practical advice that can be adapted to household situations
Building manager and apartment association consultations	Energy-saving recommendations list; living in a renovated building leaflet	Supporting communication with residents and providing leaflet-format guidance for further sharing
Community meetings and information stands	Posters; energy-saving recommendations list	Attracting attention to key energy-saving messages and directing residents to more detailed recommendations

Social media campaigns	Energy-saving recommendation posters	Reaching a wider audience and directing attention to the full energy-saving recommendations list
Renovated buildings	Living in a renovated building leaflet/poster	Supporting correct use of renovated buildings and their technical systems, including through poster-format display in common areas
CEESEN-BENDER project and partner communication channels	Energy-saving recommendation posters; recommendations list	Supporting CEESEN-BENDER communication through project websites, partner websites, newsletters and other dissemination channels

During the practical use of the materials, project partners may receive informal feedback from residents, building managers, apartment associations and local stakeholders regarding the clarity, usefulness and relevance of the materials. Where appropriate, this feedback can be used to refine examples, wording or visual elements for future local communication activities, while maintaining the common CEESEN-BENDER project identity and core energy-saving messages.

6. Conclusions

Deliverable 6.1 presents a practical package of promotional and behavioural support materials developed to support improved energy behaviour among residents of multi-apartment buildings. The materials complement the technical, financial and advisory activities of CEESEN-BENDER by focusing on everyday practices that influence energy use, comfort and indoor climate.

The three materials — the energy-saving recommendations list, the energy-saving recommendation posters and the "Living in a renovated building" leaflet/poster — provide project partners with practical tools for resident engagement and communication. They can be used in digital and printed formats, including during events, apartment association meetings, home visits, consultations, online campaigns and follow-up activities after renovation.

Beyond documenting the communication materials produced, this deliverable clarifies how they can be used as part of wider Task 6.1 activities, including advice, training, consultations and community engagement. By making the materials easy to use, adaptable and available in final dissemination formats, D6.1 supports the continued use of CEESEN-BENDER communication outputs beyond individual project activities. The editable and adaptable format of the materials also allows project partners to refine them based on practical use, local needs and feedback from residents and other stakeholders.

Together with the project's training activities, consultation services and renovation support, these materials contribute to reducing energy poverty, improving indoor comfort and promoting more sustainable energy-use practices among vulnerable households in the participating regions.

ANNEXES

The annexes listed below are provided as separate dissemination files accompanying this deliverable.

- ANNEX 1 – Energy-saving recommendations list
- ANNEX 2 – Energy-saving recommendation posters
- ANNEX 3 – Living in a renovated building leaflet-poster
- ANNEX 4 – Localised versions

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