Rural Energy Efficiency Roadmaps

(colonies)

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About RENOVERTY

RENOVERTY will foster energy efficiency building upgrades in the Central and Eastern Europe (CEE), South-eastern Europe (SEE) countries, as well as Southern European countries (SE), by setting the methodological and practical framework to build renovation roadmaps of vulnerable rural districts in a financially viable and socially just manner.

Specifically, the project aims to deliver tools and resources to support local and regional actors to build and execute operational single or multi-household roadmaps for rural areas. A scalable model will also be created to ensure the wide geographical replicability and implementation of the roadmaps by different actors at the EU level. Strategically, the project will contribute to minimising logistical, financial, administrative, and legal burdens caused by a complex and multi-stakeholder home renovation process. Additionally, RENOVERTY will ensure that building retrofits consider the social dimension by incorporating security, comfort, and improved accessibility in the roadmaps to further improve the quality of life of vulnerable populations.

Over the project's three years, seven pilots located in Sveta Nedelja (Croatia), Tartu (Estonia), Bükk-Mak & Somló-Marcalmente-Bakonyalja Leader (Hungary), Zasavje (Slovenia), Parma (Italy), Coimbra (Portugal), and Osona (Spain) will implement the roadmaps, while wider integration of rural and peri-urban development is foreseen in the long run.

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1. PURPOSE OF THE ROADMAP

This technical plan is meant for households in Zasavje that would like to improve the energy efficiency of their homes, reduce their energy bills or improve their comfort by renovating their homes. The Roadmap focuses on households living in buildings known as "colonies" (kolonije). Colonies were rental apartments built at the end of the 19th century and beginning of 20th century by coal mining companies for their workers near factories and mines. Colonies represent an architectural and culturally specific feature of the Zasavje region, are typically multi-apartment buildings and are protected under the regulation of the protection of cultural heritage.

This guide was created as part of the RENOVERTY project, which aims to promote the renovation of vulnerable rural areas and lay the foundations for increasing energy efficiency in an accessible and socially equitable way. The roadmap answers questions such as:

What are the benefits of energy renovations?
What are the subsidies available to finance renovation?
What are the main steps in the process of energy renovation?

It also offers other helpful resources to guide you in the process of energy renovation.

2. HOME ENERGY RENOVATION

Benefits of energy renovation

Before you get started, it's best to understand what energy renovation is. Energy renovation is about improving your home to make it more energy efficient, comfortable and environmentally friendly. This can include better insulation, upgrading windows, switching to energy-efficient heating systems or even using renewable energy sources such as solar panels. With these changes, you can lower your energy bills, reduce your carbon footprint and enjoy a more comfortable home all year round.

The main goal of energy renovation measures is to increase energy efficiency of your home by upgrading insulation, windows, heating systems and appliances. This reduces energy consumption, which for families struggling with high energy costs means lower utility bills and less sensitivity to price fluctuations. Poorly insulated and inefficient homes often suffer from dampness and mold and are insufficiently heated, which can cause or worsen respiratory diseases and other health problems. Renovation measures therefore focus on creating healthier indoor environments by enabling households to maintain adequate indoor temperatures in winter and summer, and thus appropriate levels of humidity, as well as elimination of mold problems. Furthermore, such renovations contribute to wider environmental goals by reducing greenhouse gas emissions. By reducing energy consumption, households reduce their carbon footprint, which is in line with global efforts to combat climate change.

The main goals of energy renovation and their associated indicators can thus be divided into four categories:

Goal	Indicator
Improved energy efficiency of the building	• Improved energy rating of the building • Reduction of energy consumption for heating
Reduced energy costs fort he household	• Reduced monthly heating and electricity bill
Higher quality of life (thermal comfort, indoor air quality)	• Increase in indoor temperature in winter / decrease in indoor temperature in summer • Lower air humidity level • Elimination of mold
Reduced climate footprint related to energy use	• Reduction of CO_2 emissions

To illustrate: When improving the energy efficiency of a building, in the energy renovation of very wasteful buildings, we can aim to improve the energy class to class A-D (or up to the limit of 105kWh/m2), and when improving the quality of life, we can aim to maintain temperatures of 19-21°C in the winter months, a maximum of 28°C in the summer months, and to maintain 40-60% indoor air humidity[1].

Types of energy renovation

[1] Focus (2024 reprint), Tips for improving the well-being in your home. Available at: https://focus.si/wp-content/uploads/2025/10/EmpowerMed-nasveti_renoverty-ver2.pdf

A household can choose between a deep renovation or a phased renovation. A **deep renovation** involves the complete renovation of a building, significantly improving its energy efficiency, often with the aim of achieving nearly net-zero energy consumption. This type of renovation usually involves various elements of the building, including insulation, windows, and heating, cooling and ventilation systems. The aim is to significantly reduce energy consumption and greenhouse gas emissions. A deep renovation often requires more extensive work than a phased renovation. **Phased renovation** is a gradual, multi-phased way of renovating a building. Instead of carrying out the entire renovation in one step, this method divides the renovation process into individual, more manageable and gradually achievable measures. In this approach, improvements are identified and implemented in several steps, allowing individual elements of the building to be addressed. This makes it easier to manage available resources, both financial and time-based, and to assess the effectiveness of the changes already made before continuing with the renovation. Primarily due to the financial burden and difficulty in financing a deep renovation, a phased approach to renovation is most appropriate for households facing energy poverty, where (based on an energy audit) we identify and prioritise key energy efficiency measures that need to be addressed immediately.

In multi-apartment buildings, the renovation can take place in an **individual apartment** (e.g. window installation, ventilation with heat recuperation) or on **common parts of the building** (e.g. external wall insulation, upgrading the heating system, etc).

Challenges related to energy renovation

While energy renovation has great benefits, it can also come with some challenges. The initial costs can be high, and savings on energy bills can take some time, requiring a long-term commitment before the investment pays off. Finding reliable experts and understanding the available grants or subsidies can also seem complicated. But don't worry, there are financial assistance programs and administrative support to help you through the process!

In this guide, we focus on the renovation process tied to Eco fund subsidies aimed at alleviating energy poverty that cover 100% of the investment (share) by the household. For general energy renovation steps you can take a look at the step-by-step process as presented by Renovaid project here.

Planning the steps of energy renovation (Eco fund subsidy for measures in individual apartments)

Eco Fund, the national fund for subsidising energy renovation measures, runs an effective program of financing energy renovation measures for households facing energy poverty, including measures in single-family houses and in individual apartments in multi-apartment buildings, offering a subsidy up to €18.000.

In the case of households that decide to undergo energy renovation within this framework of the (currently public call ZER 2024), the renovation process follows the next steps:

1. The household submits an application to the Eco Fund (if necessary/, with the assistance of a coordinator);

2. Eco Fund checks whether the applicant meets the conditions of the call and sends an official confirmation to the household;

3. If the applicant meets the eligibility conditions, Eco Fund sends an energy consultant to the applicant's address to visit the building with the purpose of: performing a simplified energy audit of the building, assessing whether the applicant's household lives in energy-inefficient premises or in inadequate living conditions, assessing whether the building is suitable for the implementation of measures and whether the implementation of the measures would be consistent with the purpose and objectives of the call, determining the priority order of eligible measures based on the condition of the building or the relevant part of the building;

4. Eco Fund prepares a Report on the Preliminary Inspection of the Building, which lists the most suitable measures for the energy renovation of the building in order;

   - *The time needed for steps 1-4 heavily depends on how many applications Eco fund is processing at a certain time. This phase can last from 3 months also up to a year (informative estimate).*

5. Eco Fund issues a Decision on the granting of the right to a non-refundable financial incentive in the amount of up to EUR 18.000 including VAT for the implementation of a measure or combination of measures and invites the applicant to submit one pro forma invoice from the selected contractor for the 1st measure in the order of priority specified in the Decision within 120 days of receiving the Decision;

6. The household obtains and submits the pro forma invoice(s) from the contractors to the Eco Fund;
    - *After the subsidy is granted, the household has 4 months (120 days) to submit the first-pro forma invoice.*

7. The applicant signs a contract with the Eco Fund and the contractor for the implementation of an individual measure. The deadline for implementing the measure is 12 months from the signing of the contract;

8. Energy renovation works start;
    - *The contractor has 12 months to finalize the works, after the contract is signed.*

9. The energy consultant carries out an interim and final check of the implementation of an individual measure;

10. Eco Fund pays the invoice to the contractor;
    - *It typically takes up to 60 days for Eco fund to reimburse the costs to the contractor.*

11. In case funds are still available after the contract for the first measure is completed, the applicant shall submit estimates for each subsequent measure within 120 days of the submission of the complete final documentation of the previously implemented measure. The procedure shall be repeated.

- *The length of the renovation process varies and depends mainly on the amount of applications Eco fund is processing and availability of contractors. The process for the first measure (first contract signed between household, Eco fund and contractor) can take from 6 months to 2 years (informative estimate).*

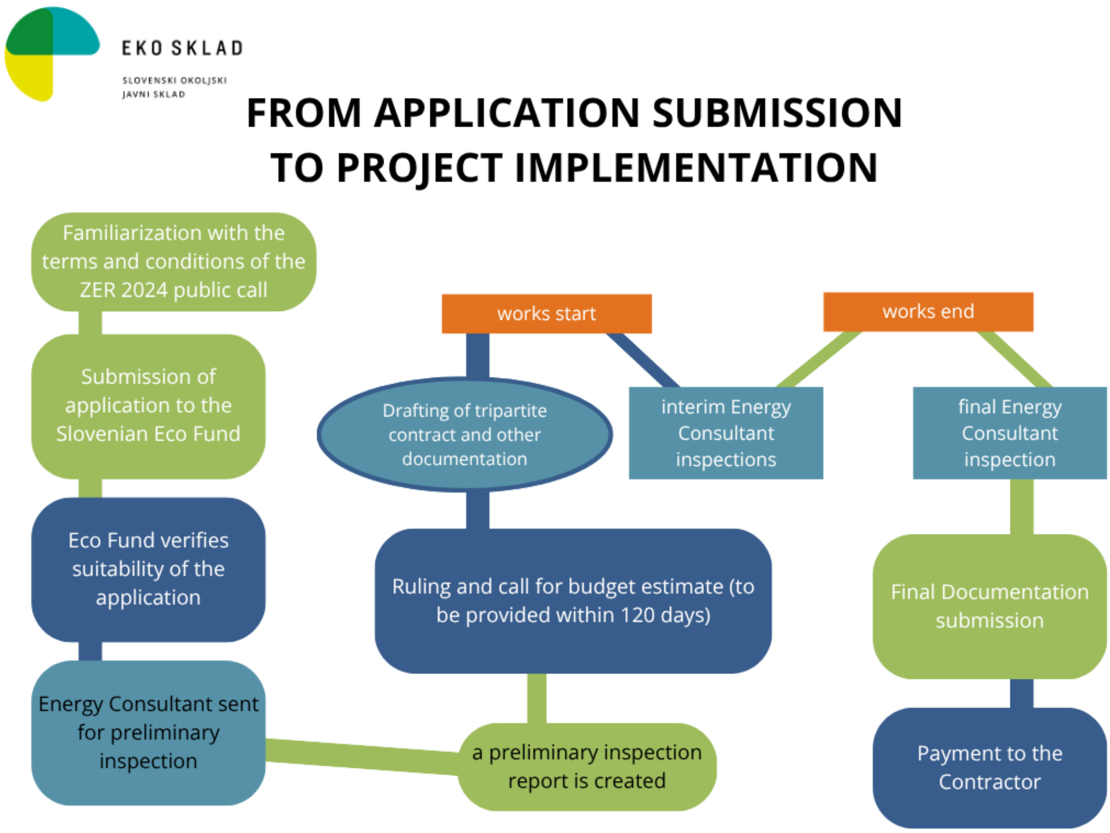

Figure 1: Renovation process related to public call ZER 2024

Initial steps in energy renovation in case of works on common parts of the building

When renovation in multi-apartment buildings takes place on common parts of the buildings (e.g. external wall insulation), the decision-making process involves multiple households and thus impacts the timeline of the renovation, particularly its initial phases. To carry out maintenance works, a consent rate of 50% among the owners is required, whereas for construction works, for which a building permit must be obtained, a consent rate of 75% among apartment owners is needed. In some cases (such as when taking out credit), a 100 % consent is required. Owners of individual dwellings in the building decide on common matters at the assembly of owners, which can be called either by owners that represent 20% of the ownership or by the manager of the multi-apartment building[1]. When the renovation of the building's common parts is agreed upon, owners can also jointly apply for the Eco fund subsidy. Building managers usually handle the joint application to the Eco fund. Since households experiencing energy poverty can receive a 100% subsidy of their share of investment from the Eco fund, it is essential that they communicate their eligibility with the manager. The manager then also manages the process of the renovation in terms of gathering proposals from contractors.

This guide details the steps you need to take and potential obstacles you may encounter to help you solve problems before they even start. Let's look at the first step in case renovation takes place in an individual apartment in a multi-apartment building: checking the eligibility criteria for Eco Fund subsidies.

3. ENERGY RENOVATION STEPS - Measures in individual apartments

3.1. Step 1: Check eligibility criteria for Eco fund subsidies

The main financial mechanism providing subsidies and soft loans for energy efficiency and the use of renewable energy sources in residential buildings is the national Eco Fund, which awards soft loans and non-refundable subsidies based on public calls for proposals. To obtain a subsidy or loan, households must apply during the public call by submitting an application, which shows that the household meets the eligibility criteria set out in the call. Until the end of the call for proposals, all investors who prove their eligibility are eligible for the Eco Fund incentive. The Eco Fund strives to keep public calls open year-round, as this is the least disruptive to the market.

3.1.1.Public call ZER 2024: Funding for households, facing energy poverty

Eco Fund allocates funds specifically intended for energy efficiency measures for households facing energy poverty. The main call for proposals through which the Eco Fund subsidises measures in individual households facing energy poverty and living in a multi-apartment building is the **Public Call for Energy Poverty Reduction (ZER 2024)**. The subsidy covers 100% of the investment costs up to EUR 18.000 (and can be increased to EUR 19.800 in the event of unforeseen additional works).

Eligibility criteria

The applicant is eligible for this subsidy, if they are least a 50% (co-)owner of the house/apartment, is materially deprived and lives in an energy-inefficient building or in inadequate living conditions is eligible for the subsidy. Material vulnerability is proven by being the recipient of: 1) financial social assistance, 2) care allowance, 3) extraordinary financial social assistance, 4) child allowance (the applicant's family must also fall within the 3rd income bracket or a being the recipient of 5) state scholarship (applicant's family must fall within the 2nd income bracket). If the applicant is eligible under criteria 4) or 5), he/she must also submit a statement of his/her financial situation, which at the time of the currently open call may not exceed EUR 23,274.24.

To be eligible for this subsidy the building must also be legal, residential in purpose and suitable for renovation. This subsidy scheme does not require advance financing of the measures by the household. The costs are initially covered by the contractor, and the latter is reimbursed by the Eco Fund after the work is completed.

Funded measures

The subsidy covers one or more of the following measures in individual apartments of a multi-apartment building:

- installation of energy-efficient windows and/or external entrance doors,
- installation of a system for preparing hot sanitary water,
- installation of local ventilation with waste air heat recovery,
- replacement of an old heating device with a new one using wood biomass.

3.1.2. Other public calls

Households that are not eligible for subsidies aimed at alleviating energy poverty can apply for funds that cover part of the investment cost. In these cases, however, the costs need to be covered upfront by the household. Eco fund transfers the funds after the works have been finished and appropriate documentation submitted.

The current subsidy scheme **(114SUB-OB24)** typically covers 30 - 50% of investment costs, depending on the measure (with a cap set for each measure). The measures in individual apartments in multi-apartment buildings that are eligible for funding are:

- installation of energy-efficient wooden windows in an older building,
- installation of local ventilation with waste air heat recovery.

There are also **soft-loans** available to households by Eco fund. Currently relevant is the public call **86OB25** with a fixed rate of 0,8%. The repayment period is 10 years for all measures, except for the measure of construction of nearly zero-energy residential buildings and for more extensive renovation of buildings that includes the implementation of at least three measures that are the subject of this call, for which the repayment period may be a maximum of 20 years. The maximum loan amount is EUR 100.000, minumum loan amount is EUR 1.500.

A loan can be taken to fund the following measures:

- installation of devices and systems for efficient heating and ventilation of premises and preparation of hot water,
- purchase of energy-efficient household appliances,
- purchase of electric bicycles or electric motors.

3.2. Step 2: Secure administrative help and seek expert advice

Bureaucracy and administrative demands related to applying for funding can provide a challenge to starting the energy renovation. As part of the ZER 2024 subsidy scheme, Eco fund provides a **coordinator** for households, which guides people through the renovation process, starting with submitting the application. The list of coordinators (by region) who can also help fill out the application form can be found on the Eco Fund website. Below is the list of coordinators for the Zasavje region (the list can change in the future).

10. ZASAVSKA REGIJA

Ana Kolar	Podjetniški projektni center ANAplus d.o.o.	040 642 239	pisarna@anaplus.eu
Diana Ščurek	Podjetniški projektni center ANAplus d.o.o.	040 200 358	diana.anaplus@gmail.com
Nino Grah Won	Podjetniški projektni center ANAplus d.o.o.	040 834 200	nino.grah@anaplus.eu
Ali Ulaga	Podjetniški projektni center ANAplus d.o.o.	041 633 614	digitalno@anaplus.eu
Carolina Turecki	Carolina Turecki s.p.	069 64 81 81 070 788 444	podpora.turecki@gmail.com
Darja Godler	KIP Vizija d.o.o.	041 696 782	darja.godler@kipvizija.si
Simon Bon	Združenje za osebno asistenco Slovenije	070 132 771	pisarna@osebna-asistenca.si
Domen Keršič	Letral d.o.o.	041 587 063	domen.letral@gmail.com
Žan Keršič	Letral d.o.o.	041 376 298	zan.letral@gmail.com
Bojan Keršič	Letral d.o.o.	041 633 849	bojan.letral@gmail.com
Dominik Pongračič	Cenitve in svetovanja, Dominik Pongračič s.p.	031 250 150	dominik.pongracic@gmail.com

Figure 2: List of coordinators under public call ZER 2024 for Zasavje (September 2025)

For those not eligible for subsidies aimed specifically for energy poverty reduction (ZER 2024), advice on administrative as well as technical issues pertaining to your energy renovation can be sought at one of the 60 consulting offices withing Eco Fund´s **ENSVET network**. These offices provide free, individual and independent energy consulting directly to citizens, companies and the public sector. The network of consulting offices is staffed by professionally qualified energy consultants with a license as an independent expert for the production of energy certificates. See chapter 4 Helpful contacts for contact details of ENSVET offices in Zasavje.

3.3. Step 3: Submit the application for funding (ZER 2024)

With the help of the coordinator you can now submit the application to Eco Fund for subsidy that is aimed at alleviating energy poverty (currently public call ZER 2024). Eco Fund checks whether the applicant meets the conditions of the call and sends an official confirmation to the household. If the applicant meets the eligibility conditions, Eco Fund sends an energy consultant to the applicant's address to visit the building to perform a simplified energy audit.

3.4. Step 4: Energy audit and identifying energy efficiency measures

An energy audit is usually the first step in the renovation process. It is a systematic inspection and analysis of energy use and energy consumption of a building[1]. In simpler terms, an energy audit offers detailed information about the energy characteristics of the dwelling, its energy systems and energy sources, and provides a list of measures identifying methods for improving the overall energy efficiency of the audited dwelling. This type of information is crucial for planning energy renovation.

A simplified energy audit is included as part of the Eco Fund subsidy scheme aimed at alleviating energy poverty (ZER 2024). When the applicant fulfils conditions of the public call, the Eco Fund´s appointed energy consultant conducts a preliminary inspection of the building, which also includes a simple energy audit. This audit identifies areas where energy is being wasted, such as poor insulation, inefficient heating systems, or outdated appliances. Based on the audit, the next step is to prioritize renovations that will yield the highest energy savings.

For those that are not eligible for this subsidy advice on priority measures can be sought at the closest **ENSVET office** that offer free and independent energy advice. Another option to gain more insight into the energy efficiency state of the home is to gain **an energy performance certificates (EPCs),** which is issues based on an energy audit. In Slovenia, an EPC must be obtained by the building's owners if the building (or apartment) is to be sold or leased for a new lease (longer than one year). Building owners who do not sell or rent out their properties do not need an energy certificate. An energy certificate must also be obtained for all new buildings. Energy certificates are produced by independent experts with a license. The current list of experts is available on the website of the Ministry of Environment, Climate and Energy[2]. The cost of obtaining an EPC is dependent on the type and size of the household, the complexity of the heating, cooling and ventilation system, the documentation provided and the individual contractor, their proximity to the household etc. For a typical single-family house, prices vary between EUR 300 and EUR 400[3]. The cost of the EPC could be an initial obstacle to the energy renovation process of households experiencing energy poverty, if an existing EPC would be required to apply for subsidies (this is not the case).

Under the subsidy programme aimed at reducing energy poverty, a list of priority measures to be funded is created after the simplified energy audit is performed by Eco fund´s appoined energy advisor. For renovations under other subsidy schemes, information gathered in project RENOVERTY can be useful. Overall, the two energy renovation measures in multi-apartment buildings that stand out as most frequently proposed measures based on energy audits that were conducted as part of the project are: **insulation of the ceiling** and **mechanical ventilation with heat recovery**. The DREEM model (Dynamic high-Resolution dE-mand-sidE Management) for single-family house and multi-apartment building typology was used to determine the most suitable energy efficiency measures in each pilot case study within the project. Based on the DREEM model it was established that for multi-apartment buildings in Zasavje, the replacement of the existing heating system with an energy-efficient ***heat pump*** is the *most cost-effective measure*, when taking into account annual energy savings and levelized cost of saved energy, followed by ***boiler upgrade – gas*** and ***exterior walls insulation***.

3.4.1 Proposed measures for multi-apartment buildings based on audits and DREEM model (in more detail)

Overall, the two energy renovation measures that stand out as most frequently proposed measures based on conducted energy audits in Zasavje as part of the RENOVERTY project are: **insulation of the ceiling** and **mechanical ventilation with heat recovery**.

Proposed measure by the energy audits – colonies

For both audited colonies insulation measures, particularly **insulation of the ceiling towards the attic**, and installing a **mechanical ventilation system** are the main proposed measures.

Measure	**11**	**12**
Insulation of the ceiling above the basement		X
Insulation of the ceiling towards the attic	X	X
Insulation of external walls	X	
Mechanical ventilation with heat recovery	X	X
Biomass heating	X	

Household	Proposed measure
# 11 EPC nb. 2023-808-65-110132	• Insulation of the ceiling against the attic • Insulation of external walls, • Mechanical ventilation with heat recovery • Heating with a special biomass heating device, Biomass heating
# 12 EPC nb. 2023-808-65-110137	• Insulation of the ceiling above the basement • Insulation of the roof-ceiling in the attic • Mechanical ventilation with heat recovery • Installation of photovoltaic panels • Transition to ambient heat

Proposed measure by the DREEM model – multi-apartment buildings

We also employed the Dynamic high-Resolution dE-mand-sidE Management (DREEM) model. DREEM to apply an evaluation framework that determined the most suitable Energy Efficiency Measures in each pilot case study of the project. The modelling was done for single- and multi-family house typology (MFH). Considering the specificities of the rural housing stock, the following energy efficiency measures (EEM) were evaluated for the RENOVERTY pilot regions:

- *EEM_1 - Exterior walls insulation*: Insulating the main walls of the building under study from the outside, which commonly have solid walls with no cavities.
- *EEM_2 - Double-glazed windows*: Replacing single-glazing windows with energy-efficient glazing (*Double-glazed windows*) to reduce heat loss.
- *EEM_3 - Roof insulation*: Insulated between and under the rafters of the roof itself, reducing the overall heat transfer coefficient by adding materials with low thermal conductivity (this measure applies only in the case of SFH).
- *EEM_4 - Energy-efficient heating system* (*Boiler upgrade - gas*): In this case, the dwelling's outdated heating system is replaced by an efficient gas boiler with a higher efficiency ratio.
- *EEM_5 - Energy-efficient heating system* (*Boiler upgrade - biomass*): In this case, the dwelling's outdated heating system is replaced by an efficient biomass boiler with a higher efficiency ratio.
- *EEM_6 - Energy-efficient heating system* (*Heat pump*): In this case, the dwelling's outdated heating system is replaced by a heat pump with a higher efficiency ratio.
- *EEM_7 - Energy-efficient lighting:* In this case, the conventional tube lights and bulbs (fluorescent lamps) are replaced by high energy-efficiency ones (LED lamps).

In the baseline scenario, modelling results indicate that the MFH typology equipped with a gas boiler in the rural region of Zasavje in Slovenia consumes around 19,551.2 kWh annually (almost 317.4 kWh/m^2), which is divided into 16,682.1 kWh for its heating needs and 2,869.0 kWh for its cooling and appliances needs.

Based on the DREEM model, it was identified that EEM_6 (heat pump) leads to the highest amount of energy savings (66% reduction compared to the baseline scenario), while EEM_4 (boiler upgrade – gas) leads to a 13.5% reduction and EEM_1 (exterior walls insulation) leads to reducing energy consumption by 10.7%.

According to the analysis, EEM_1 (Exterior walls insulation) and EEM_7 (Energy efficient light bulbs) demonstrate the best performance in terms of NPV (net present value). EEM_2 (Roof insulation), EEM_4 (Boiler upgrade - gas) and EEM_5 (Boiler upgrade - biomass) are not economically viable investments, without any subsidy rate, as they demonstrate negative NPV. More specifically, EEM_4 (Boiler upgrade - gas) becomes an attractive investment for a subsidy rate of at least 25%.

The replacement of the existing heating system with an energy-efficient ***heat pump (EEM_6)*** is the *most cost-effective measure* considering annual energy savings and levelized cost of saved energy, followed by ***EEM_4 (boiler upgrade – gas)*** and ***EEM_1 (exterior walls insulation)***. On the contrary, EEM_5 (boiler upgrade – biomass) and EEM_2 (double glazed windows) are shown to be the least cost-effective energy-efficient measures due to their high LCSE and the low values of expected annual savings, indicating the need for incentives and initiatives aiming to increase their cost-effectiveness and lower their investment costs. The model also indicates that that EEM_1 (External wall insulation), EEM_6 (Heat Pump) and EEM_7 (Energy efficient light bulbs) offer the most valuable combinations of NPVs and LCSEs.

3.5. Step 5: Cultural heritage status (gain consent of the Institute for the protection of cultural heritage of Slovenia)

Colonies represent an architectural and culturally specific feature of the Zasavje region and are protected under the regulation of the protection of cultural heritage. For example: The Šuštarjeva colony (Trbovlje) has the status of a monument of local importance, whereas the Okrogarjeva colony (Zagorje ob Savi) has the status of registered heritage. Cultural heritage buildings can have pose limitations on the scale and type of energy renovation measures that can impact the protected features of the building. "*The limited scope and thus smaller effects of the renovation in terms of improving energy indicators may raise doubts among the owners about the feasibility of the operation, regardless of its positive results, for example in the form of improved living comfort and reduced operating costs. Renovation costs may be higher compared to the renovation of a non-heritage building if the use of special ("non-standard", "historic") materials or techniques is required to bring the added, replaced or restored elements as close as possible to the original*[2]." When it comes to energy renovations of colonies, one of the first steps is to **check the protection status of the buildings and if/what limitations it poses to the renovation status**. This information can be provided by the *Institute for the protection of cultural heritage of Slovenia (ZVKDS)*: "ZVKDS experts can provide you with information about the creation and history of the building, archival data on contractors and crafts, information about the position of the monument in space, information about the building's history and, based on these, cultural protection conditions for regular maintenance or renovation work on the facade, building furniture (windows, doors), roof or attic, park around the building, etc."[3] Information on cultural heritage sites is also available as open data on the Information system of cultural heritage, which includes the national registry and legal regulations pertaining to specific heritage sites. If cultural

[2] National Long-term Strategy for Energy Renovation of Buildings until 2050 (2021). Available at: https://www.energetika-portal.si/fileadmin/dokumenti/publikacije/dseps/dseps_2050_final.pdf (access 1. 8. 2024)
[3] ZVKD (2025) Za lastnike: https://www.zvkds.si/nasveti-za-lastnike/.

heritage protection measures apply to your building you will need to **submit an application at ZVKDS for issuing a cultural protection consent.**

3.6. Step 6: Finding contractors and collecting pro-forma invoices

The implementation of energy renovation measures, especially the timeline of the renovation process, depends heavily on the availability of companies or contractors carrying out the renovation work. The usual profile of companies involved in energy renovation in individual apartments are companies that provide[4]:

- installation of windows and doors,
- installation of mechanical ventilation systems.

If different measures are carried out in the renovation process under public call ZER 2024, contracts with different contractors will likely be signed. For example, contractors who install windows usually do not install mechanical ventilation systems. In addition, there is a certain risk when entering a contract with smaller companies, as such companies may have difficulty covering all renovation costs in advance. Therefore, an important step in the renovation process is also checking the availability of the most suitable contractors in a particular region.

The process of searching, selecting and communicating with contractors can be a demanding and complex process, accompanied by distrust in contractors. Under Eco fund´s subsidy scheme for reducing energy poverty (ZER 2024) the coordinator providing support to households can also provide help with this step. Additionally, there are some resources available that can help with the contractor selection process:

- Eco Fund´s list of contractors. The list is for informative purposes only. The Eco Fund adds to the list every contractor who has completed the application for entry into the list and has a registered activity of implementing measures in accordance with the ZER public tender. The Eco Fund does not check the liquidity and references of individual contractors before entering them into the list;
- Eco fund's guidelines for contractors in preparing pro-forma invoices
- list of contractors for investments in renewable energy sources provided by Borzen. The list is informative in nature. Borzen does not guarantee for the contractors from the list and does not assume any responsibility for any business cooperation that would occur based on the information from this list;
- online platform mojmojster, which connects clients with potential contractors from various fields (architecture, construction, carpentry, facade work, window installation, etc.)

Slovenia does not have a national register of average costs for energy renovation measures. Households and individuals planning energy renovation can find some useful information on the mojmojster online platform, which connects contractors with clients. The following table lists cost estimates for two relevant individual renovation measures listed on this platform:

MEASURE	COST ESTIMATE (if not specified, costs are not tied to a specific building typology)	REFERENCE
Mechanical ventilation with heat recovery (450 m^3/h, single family house)	€ 4.800–8.500	https://www.mojmojster.net/cene/prezracevanje
Window installation (installation costs only, no materials)	€/okno 60–150	https://www.mojmojster.net/cene/montaza_vrat_in_oken

Table 1: Average costs estimates for individual renovation measures on online platform mojmojster.

When the contractor is selected **the households, contractor and Eco fund sign a contract** on the measures to be implemented.

3.7. Step 7: Start of works and interim inspection by energy advisor

Energy renovation works can now start. Under the public call ZER 2024, the contractors have 12 months to finish the works after signing the contract with the households and Eco fund. During this time energy consultant carries out an interim check of the implementation of an individual measure.

3.8. Step 8: Finalizing the works and paying the contractor

After the works are completed the energy consultat carries out the final check of the implementation of an individual measure and Eco fund transfers the funds to the contractors (based on the issued invoice). Keep in mind, that in case funds from the 18.000 EUR subsidy are still available after the contract for the first measure is completed, the applicant shall submit estimates for each subsequent measure within 120 days of the submission of the complete final documentation of the previously implemented measure. The procedure shall be repeated.

For those not eligible for subsidies under the program for alleviating energy poverty and can apply for funding that covers part of the investment (see step 1), the application is submitted after the works are completed with all the necessary documentation - the necessary documentation includes building permit of the building or statements on the legality of the building as well as documentation related to purchases and works carried out for specific measure.

3.9. Step 9: Changing behavior and making the most out of the renovation

To enjoy the full benefits of your newly renovated home it is essential to combine the benefits of the renovation with efficient use of energy in your home. You can find some of the habits that can lead to more efficient use of energy in these "Tips for reducing energy and water use at home".

3.10. Obstacles and challenges

Starting an energy renovation project involves various complexities ranging from financial and technical difficulties to adaptation to regulations, administrative complexity and resistance to change. Under Eco fund´s subsidy program to alleviate energy poverty (ZER 2024) a lot of these obstacles are addressed; however there are still some challenges that can affect the renovation process.

The table below offers an analysis of possible risks that may emerge during an energy renovation project concerning measures in individual apartments in a colony as multi-apartment building, the ways in which the household can mitigate these risks, and who is involved in addressing these risks (actors besides households).

Table 2: Analysis of possible risks associated with energy renovation (from co-creation process)

	RISK	SOLUTION	WHO	HOW
ADMINISTRATIVE	Complexities of the process (of applying for funds).	Coordinator under ZER 2024. ENSVET consultancy offices.	Eco fund, Center for social work.	If eligible for ZER 2024, contact a coordinator. Alternatively, if eligible for ZER 2024, you can also ask the local Center for social

				work to help with your application to ZER 2024. If not eligible for ZER 2024, seek advice at the local ENSVET office.
COMMUNITY/ SOCIAL	Lack of information on funding options, lack of trust in the contractors and Eco fund.	Informative list of contractors provided by Eco fund (and Borzen regarding RES investment); support of coordinator or ENSVET advisors, collaboration of Center for social work. Stronger collaboration between local stakeholder that are in touch with vulnerable households (and national stakeholders such as Eco fund) to better identify, inform and support households in their renovation efforts.	Eco fund, Borzen, Center for social work. Other local stakeholders (humanitarian organizations, municipalities, health care workers...)	Check Eco fund website or contact ENSVET office for information on subsidies. To gain additional information about the effectiveness and certainty of the funding programs of Eco fund, seek information at your local Center for social work, that is aware of Eco fund programs and have helped their beneficiaries to apply for funding. Look for contractors in your area on Eco fund´s informative list of contractors for public call ZER 2024; seek support of coordinators or advice at the local ENSVET office on the process of finding contractors. Additionally, you may reach out to LAG Zasavje or FOCUS, who have been involved in building collaborative networks, platforms and groups of local stakeholders that have established trusted relationships with

				households. These stakeholders can link you to contacts that have already carried out work in your area and that you can work with.
LEGAL/ COMMUNITY/ SOCIAL	Hesitation or reluctance of households to visit ENSVET offices.	Upgrading ENSVET offices as effective one-stop-shops to support households, facing energy poverty.	Eco fund, Municipalities, Regional development agencies.	Call the local ENSVET office (see helpful contacts) to gain advice and information over the phone (no need to visit the location); check for the possibility of a home visit from the energy advisor.
FINANCIAL	Lack of funding for implementing more measures.	Combining ZER subsidy with partial subsidies and loan options. Availability of municipal of funding (at the time of preparing this roadmap there were none). Increase funds for energy renovations of households, facing energy poverty in the national Social climate plan.	Eco fund, Municipalities, Ministry for environment, climate and energy.	Check options for financing additional measures through Eco fund subsidies offering partial cover of the investment or loan options. Check availability of municipal funding programs for renovations. Regularly check Eco fund and Municipal websites to see if any new funding programmes are made available through the social climate fund (SCF). These are expected to become available when SCF becomes operational in the coming two years.

TECHNICAL	Need for relocation during renovation works.	Temporary accommodation.	There are no programms providing temporary accommodatio n to households during the works or covering the costs of relocation.	Plan ahead, if you would need to relocate during the renovation works, and arrange accommodation with friends, family or other options (local accommodation offer).
	Uncertainty about which energy renovation measures are really needed in the household.	Energy audit.	Eco fund.	If eligible for ZER 2024 a simplified energy audit will be conducted as part of the subsidy program. Contact Eco fund coordinator, who will give contacts for free technical audits to help provide this information. If not eligible for ZER 2024, contact ENSVET office for advice on renovation measures. Alternativelly, you can also finance the making of the energy performance certificate (EPC) of your home. The list of accredited energy advisors equipped to create EPCs can be fund here and here. To gain more information on renovation process and renovation measures, partake in an online course created by RENOVERTY

				project and can be found here.

Source: Focus, association for sustainable development

4. ENERGY RENOVATION STEPS - Measures on common parts of the building

4.1. Step 1: Be involved in the decision-making on the renovation[4]

When renovation in multi-apartment buildings takes place on common parts of the buildings (e.g. external wall insulation), the decision-making process involves multiple households and thus impacts the timeline of the renovation, particularly its initial phases. To carry out **maintenance works, a consent rate of 50%** among the owners is required, whereas for construction works, for which a **building permit must be obtained, a consent rate of 75%** among apartment owners is needed. In some cases **(taking out a joint loan for renovation) a 100% consent** among owners is required.

It is important you are involved in the decision-making process. Additionally, you can even be one of the promotors of the idea of renovating the building! Owners of individual dwellings in the building decide on common matters such as renovation measures at the **assembly of owners**, which can be called either by owners that represent 20% of the ownership or by the manager of the multi-apartment building. If decisions at a meeting do not establish the necessary consensus, majority of the condominium owners present can also decide to repeat the assembly meeting or to make decisions by signing a document or by electronic signature.

The role of the manager of the building

[4] Ministry of solidarity-based future (2025) Decision making in multiapartment buildings: https://www.gov.si/teme/upravljanje-v-vecstanovanjskih-stavbah/.

In multi-apartment buildings where there are more than two condominium owners and more than eight individual units, the condominium owners must elect a manager. The latter can be a legal or natural person registered for property management.

The main roles of the manager are to:

- implement the decisions of the condominium owners (e.g. decision on renovation),
- ensure regular maintenance and operation of the common parts,
- ensure the distribution of costs and the collection of liabilities,
- manage the reserve fund and common money,
- represent the condominium owners in management issues,
- representing the condominium owners before administrative authorities in matters of issuing permits and consents in geodetic procedures related to the building,
- preparing a maintenance plan, a schedule of implementation and ensures the implementation of the plan,
- accepts payments from the condominium owners and manages payments from contracts concluded with third parties.

In the process of renovation the manager usually also leads the process of choosing the project designer, collecting offers from contractors and choosing the most suitable contractor, identifying funding opportunities and submitting the joint application for Eco fund subsidy. Before the decision is made the building manager typically involves the project designer that prepares project documentation ("PZI - projekt za izvedbo) that inform the decision-making process of the owners.

The renovation project managed by the building manager needs to also take into account the cultural heritage status of the buildings. Cultural heritage buildings can have pose limitations on the scale and type of energy renovation measures that can impact the protected features of the building. "*The limited scope and thus smaller effects of the renovation in terms of improving energy indicators may raise doubts among the owners about the feasibility of the operation, regardless of its positive results, for example in the form of improved living comfort and reduced operating costs. Renovation costs may be higher compared to the renovation of a non-heritage building if the use of special ("non-standard", "historic") materials or techniques is required to bring the added, replaced or restored elements as close as possible to the original*[5]." When it comes to energy renovations of

[5] National Long-term Strategy for Energy Renovation of Buildings until 2050 (2021). Available at: https://www.energetika-portal.si/fileadmin/dokumenti/publikacije/dseps/dseps_2050_final.pdf (access 1. 8. 2024)

colonies, the **protection status of the buildings and if/what limitations it poses to the renovation status must be checked and cultural protection consent by the ZVKDS gained.**

Reserve fund

A reserve fund – common property of all condominuim owners - is obligatory in multi-apartment buildings where there are more than two condominium owners and more than eight individual units. The funds of the reserve fund are used to:

- cover maintenance costs foreseen in the maintenance plan,
- cover costs related to more efficient energy use,
- pay for improvements, necessary maintenance work,
- repay loans taken out for these purposes.

In case of planned renovation works or other maintenance works that require higher financial costs than currently available funds in the reserve funds, contribution to the reserve fund can be increased (for this change 50% consent among the owners has to be reached).

4.2. Step 2: Stay informed: Choosing the contractors and start of the works

After consensus is reached and the decision on renovation is made by the condominium owners, the process of choosing a contractor follows, managed by the building manager. This involved opening a tender for contractors and choosing a contractor. Contract with the contractor(s) is signed and works can begin.

4.3. Step 3: Check eligibility for 100% Eco fund subsidy and contact the building manager

One of the most important steps for vulnerable households living in multi-apartment buildings is submitting the joint application for Eco fund subsidy, which is usually done by the manager. Vulnerable households are eligible for Eco fund subsidy that **covers 100% of their share of investment.** However, this needs to be communicated with the building manager on time, since proof of eligibility for this subsidy must be included in the joint application of the residents.

Eco fund (currently open call 124SUB-OBPO25) offers subsidies for new joint investments for energy efficiency improvements multi-apartment buildings, namely for the following renovation measures:

- thermal insulation of external walls, the floor above the external air or external walls towards the ground,
- thermal insulation of a flat roof, pitched roof or ceiling against an unheated room/attic,
- thermal insulation of the floor in the field or the floor above an unheated room/basement,
- optimisation of the heating system.

Applicants who are co-owners of a condominium as well as recipients of one of the forms of state social benefits are eligible for a subsidy that covers 100% of their investment share (either financial social support, extraordinary financial social support – twice in the last two years – or protection allowance). If you are not eligible for the 100% subsidy, the amount of the subsidy per individual household is calculated based on the ownership share of the multi-apartment building, usually covering between 30 and 50% of the investment (cap set by EUR or EUR/m2).

The same type of financial support for households, facing energy poverty (100% subsidy for their investment share) is offered in cases of new joint investments in the modernisation of heating devices in common heating systems and/or common hot water systems (see public call 120SUB-SOG24), namely:

- installation of a solar heating system,
- installation of a wood biomass boiler for central heating of the building,
- installation of a heat pump for central heating of the building,
- replacement of the heating station or installation of a new heating station for connection to the system of district heating of the building.

If you are not eligible for the 100% subsidy, the amount of the subsidy per individual household is calculated based on the ownership share of the multi-apartment building, usually covering between 30% of the investment (cap set by EUR or EUR/m2).

After a subsidy is granted for a joint investment in multi-apartment buildings a loan can also be taken out by the condominium owners at Eco fund for the same measures (see public call 81OBVSS25). Besides being granted a subsidy for the joint investment, the applicants for the loan need to be creditworthy, the creditworthiness criteria are a part of the open call´s documentation (see the current criteria here). The maximum credit amount is EUR 15.000,00, the minimum is EUR 1.500,00, with the minimum loan instalment of EUR 40.00. The fixed interest rate of the loan is 0,0%, while the repayment period is up to 10 years.

4.4. Step 4: Changing behaviour and making the most out of the renovation

To enjoy the full benefits of your newly renovated building it is essential to combine the benefits of the renovation with efficient use of energy in your home. You can find some of the habits that can lead to more efficient use of energy in these "Tips for reducing energy and water use at home".

4.5. Obstacles and challenges

The table below offers an analysis of possible risks that may emerge during an energy renovation project in cases renovation takes place on common parts of the colony, the ways in which the household can mitigate these risks, and who is involved in addressing these risks (actors besides households).

Table 3: Analysis of possible risks associated with energy renovation (findings based on the co-creation process of the Roadmap):

	RISK	SOLUTION	WHO	HOW
COMMUNITY/SOCIAL	Complex and lengthy decision-making process (disagreement between owners).	Owners involved in initial discussions. Raising awareness on the benefits of energy renovations. Presenting calculations and funding opportinities.	Building manager. Owners/households.	Be involved in initial decision-making process by attending owners assemblies or even calling them.
COMMUNITY/ SOCIAL	Lack of trust and communication between the	Building manager has the information on households	Building manager. Owners/households.	Informing the building manager on the eligibility before the joint

	household and building manager. Proof of eligibility for 100% Eco fund subsidy is not included in the joint application for Eco fund funding.	eligible for Eco fund subsidy that covers 100 % share of investment.		application for Eco fund subsidy is submitted.
FINANCIAL	Not eligible for Eco fund subsidy that covers 100% of investment share.	Partial subsidies by Eco fund.	Building manager. Owners/households.	Joint application for Eco fund subsidy.
ADMINISTRATIVE/ LEGAL	Cultural protection status.	Consent on renovation works by the Institute for the Protection of Cultural Heritage of Slovenia.	Institute for the Protection of Cultural Heritage of Slovenia. Building manager/project designers.	Building manager/project designer check the cultural heritage protection status and submit the application for consent by the Institute for the Protection of Cultural Heritage of Slovenia. (with the help of the coordinator)
TECHNICAL	Need for relocation during renovation works.	Temporary accommodation.	There are no programms providing temporary accommodation to households during the works or covering the	Plan ahead, if you would need to relocate during the renovation works, and arrange accommodation with friends, family or other options (local

			costs of relocation.	accommodation offer).

Source: Focus, association for sustainable development

5. SUMMARY

Congratulations, you have arrived at the end of this guide. Let´s summarize all the key steps in the renovation process, with a focus on renovation process related to Eco fund subsidy programme aimed at reducing energy poverty (currently ZER 2024)!

Type of renovation: individual apartment or common parts of the building	What type of renovation concerns me? Do I want to implement measures in my apartment (e.g. window instalment) or is renovation of common parts of the building needed?	Check section 3 or 4.
Measures in an individual unit of a multi-apartment building		
Check eligibility criteria for Eco fund subsidies	Am I eligible for Eco fund subsidy aimed at reducing energy poverty? (currently public call ZER 2024) If not, what are some other subsidies available through Eco fund for energy renovation?	Check section 3.1.

Secure administrative support and seek expert advice	If eligible for ZER 2024: Do I need the administrative support of a coordinator? If not eligible for ZER 2024: Where is the closest ENSVET office and when should I book the consultation appointment?	Check section 3.2.
Submit the application	Will I submit the application, or will I authorise the coordinator to submit it?	Check section 3.3.
Energy audit and identifying measures	What are the priority measures to be implemented? Which measures have the potential to bring the most benefits within the limited budget?	Check section 3.4.
Cultural heritage status	Do special cultural heritage protection measures apply to my building? Do I need to gain cultural protection consent for renovation works from the Institute for the Protection of Cultural Heritage of Slovenia?	Check section 3.5.
Finding contractors	Who are the relevant contractors in the region? Are there any regional contractors on the informational list of Eco fund? Should I ask for support of the coordinator in finding the contractor?	Check section 3.5.
Implementing works	Do I need to relocate during the works?	Check section 3.6. and section 3.9.
Final onsite check and payment	Are there any remaining funds from the subsidy amount?	Check section 3.7.
Adapt habits of energy use	What are some tips for efficient use of energy and water to really harness all the benefits of energy renovation?	Check sections 3.8.
Check the main challenges during the renovation process	What challenges can you find in the process?	Check section 3.9.
Measures on common parts of a		

multiapartment building		
Decision-making on the renovation	Is my building deciding on renovation? When is the next owners assembly to discuss the renovation project? What are the specifics of the renovation (which measures would be implemented, what is the financing scheme and what is the timeline of the project)?	Check section 4.1. and 4.2.
Submitting the application for Eco fund subsidy	Am I eligible for Eco fund subsidy that covers 100 % of investment share? When is the building manager submitting the joint application for the Eco fund subsidy?	Check section 4.3.
Adapt habits of energy use	What are some tips for efficient use of energy and water to really harness all the benefits of energy renovation?	Check sections 4.4.
Check the main challenges during the renovation process	What challenges can you find in the process?	Check section 4.5.

6. HELPFUL CONTACTS

Eco Fund
E-mail: ekosklad@ekosklad.si
Phone number: 01/241 48 20 (telephone office hours every Monday, Wednesday, Friday between 12.00 and 14.00)

ENSVET office in Zagorje ob Savi
Address: Cesta 9. avgusta 5, 1410 Zagorje ob Savi
Office hours are by prior appointment each Wednesday between 16.00 and 17.00.

Make an appointment for an energy consultation at the ENSVET office: every day between 1.00 and 14.00 using telephone number 080 1669.

You can also make an appointment online: here.

ENSVET office in Trbovlje
Address: Gimnazijska cesta 22a, 1420 Trbovlje
Office hours are by prior appointment each Thursday between 17.00 and 18.30.

Make an appointment for an energy consultation at the ENSVET office: every day between 1.00 and 14.00 using telephone number 080 1669.
You can also make an appointment online: here.

Center for social work Hrastnik
Address: Log 9, 1430 Hrastnik
Phone number: 03 564 27 70
E-mail: gpcsd.hrast@gov.si

Center for social work Trbovlje
Address: Mestni trg 5a, 1420 Trbovlje
Phone number: 03 777 33 06
E-mail: gpcsd.trbov@gov.si

Center for social work Zagorje ob Savi
Address: Cesta zmage 7, 1410 Zagorje ob Savi
Phone number: 03 566 02 40
E-mail: gpcsd.zagor@gov.si

Manager of your building (*check utility invoices to check the company managing your building)
Some of the most present companies managing multiapartment buildings in Zasavje are Spekter, SOP Trbovlje, Stanovanjsko podjetje Zagorje ob Savi, družba Naše okolje.

Zavod za varstvo kulturne dediščine Slovenije (ZVKDS)
Address: Poljanska cesta 40, 1000 Ljubljana
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