



# **Rural Energy Efficiency Renovation Roadmap for Vulnerable Groups (REER)**

## **Regional Strategy of Osona and Lluçanès 2025-2035**



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## Editorial team



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# 1. INTRODUCTION

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Are you living in a rural or peri-urban area? Do you live in a very hot dwelling in summer and very cold in winter? Do you feel like your bills are ridiculously high? Have you ever checked the energy efficiency of your household, or tried to take steps to improve the energy performance of your household but stopped due to the high costs involved? Then this guide is for you!

This technical roadmap is addressed to families like you living in Osona and Luçanès, who would like to increase the energy efficiency of your home, reduce your bills or improve the comfort of your home via renovation. This guide is created by the **RENOVERTY** project [1] which seeks to promote the renovation of vulnerable rural districts and lay the foundations for increasing energy efficiency in an accessible and socially just way.

## 2. ENERGY RENOVATION OF DWELLINGS

Before beginning, it's best to understand what an energy renovation implies. Energy renovation means improving your home to make it more energy-efficient, comfortable, and eco-friendly. This can include better insulation, upgrading windows, switching to energy-saving heating systems, or even using renewable energy like solar panels. By making these changes, you can lower your energy bills, reduce your carbon footprint, and enjoy a cozier home all year round.

While energy renovation has great benefits, it can also come with some challenges. The upfront costs can be high, and it may take time to see savings on energy bills, requiring a long-term commitment before they pay themselves off. Finding reliable professionals and understanding available grants or subsidies can also feel complicated. But don't worry—there are financial aid programs and expert advice available to help make the process smoother and more affordable!

In Illustration 1, you can find the general process to follow when renovating your home. However, not all steps can be simple and most of them require an expert's insight. So, if you find yourself lost in the process, don't worry! The steps that you should follow as a citizen, as well as the complexities you may encounter are detailed in this guide to help you resolve problems before they even begin. Let's take a look at the first step: Contacting experts and seeking advice.

**Illustration 1: Infographic summary of the energy renovation process**



Source: Ecoserveis Association

## 3. STEPS TO FOLLOW TO RENOVATE YOUR HOME

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### 3.1. Seek advice

A lot of questions can be raised when addressing energy renovation in our home. Where should I start with my energy renovation? Will I be able to afford it? When will I receive the grants for renovating my home? What are the most effective improvements for my home? What are the bureaucratic barriers I will have to face?

It is normal to feel overwhelmed and feel that this process is very time-consuming. Nevertheless, energy retrofitting offices are spread around the territory to dedicate efforts and help citizens in the process.

#### **Energy Retrofitting Offices. What are they?**

The energy retrofitting offices are intended to offer citizens all of the information related to renovation, provide support during the processes and help resolve problems, if they arise. This includes offering advice and information about available grants for renovation and supporting you when applying for them. More specifically, the services offered include:

- Information and advice on where to **look for professionals** able to carry out specific renovation works. They offer guidance on hiring professionals and put citizens in touch with the respective professional associations.
- Examples and information about **possible measures to be implemented and how much energy and money can be saved.**
- Information on **available grants and funding programmes.**
- **Information about possible barriers** that may be encountered, and how to fix them if they arise.

Osona and Lluçanès still do not have specialized Energy Retrofitting Offices. However, the **Regional Housing Office of Osona** [2] provides services similar to an Energy Retrofitting Office.

### 3.2. Look for professionals

Entities and organisations that represent professionals in Osona and Lluçanès are a good source to use when considering renovating your home, but... what professionals are involved in retrofitting projects?

The professional profiles that might be involved are:

1. **An energy certifier** conducts the energy audit and issues the Energy Performance Certificate that analyses the current energy consumption and performance of the building, while also detecting the elements that need improvement.
2. **An architect or technical architect** creates the overall design of the retrofitting and the planning of the best structural and energy solutions, ensuring that the project complies with the regulations and supervising the correct execution.
3. **A building and/or energy engineer** designs thermal and electrical systems (heating, ventilation, air conditioning, photovoltaics, etc.) using criteria to propose the most efficient technological solutions.
4. **A sustainability and energy efficiency consultant** advises on the implementation of energy efficiency measures, sustainable materials and the use of renewable resources, while seeking the maximum reduction of environmental impact.
5. **A project Manager or Site Manager** coordinates and supervises the entire retrofitting process, ensuring that it is executed correctly and complied with within the deadlines and budget.
6. **Specialized installers** (insulation, windows, energy systems, ventilation, etc.) are in charge of the installation of specific elements of the project.
7. **Bricklayers** are responsible for the construction or reconstruction of walls, cladding and other elements of the building's structure. They also prepare the structure for the installation of insulation and carpentry.
8. **Enclosure installers** install doors and windows in the openings of the building, ensuring proper watertightness and energy efficiency.
9. **Painters** finish surfaces with paint or other decorative coatings.
10. **Suppliers of materials** are companies supplying the necessary materials, according to the needs of the project.
11. **Transporters**, on the one hand, transport the materials necessary for the retrofitting from the suppliers to the site of the work (guaranteeing timely delivery and in good condition) and the transport of old materials and waste generated (rubble, old windows and doors) to landfills or recycling points. On the other hand, in the case of possible rehousing during the works, they fulfil the transfer of furniture and boxes with residents' personal belongings.
12. **Final inspection and quality control** takes place once the work is completed. A final audit is completed to verify that the works are executed and finished correctly, that there are no defects and that the home is fully energy efficient.

Sometimes, enterprises provide **turnkey services**, meaning the entire renovation package is implemented as a complete solution. However, if more specific and detailed advice is required, the entities and organisations of professionals which can help with this can be found in Table 1.

**Table 1: Entities and organisations of professionals operating in Osona and Lluçanès**

Entity	Link
Industrial Engineers of Catalonia (demarcation of Central Catalonia)	<a href="https://www.eic.cat/eic-home">https://www.eic.cat/eic-home</a>
College of Architects of Catalonia (demarcation of Central Catalonia)	<a href="https://www.arquitectes.cat/ca/directori/comarques-centrals">https://www.arquitectes.cat/ca/directori/comarques-centrals</a>
Barcelona College of Technical Architecture (Osona and Moianès Delegation)	<a href="https://www.cateb.cat/delegacio-osona-moianes/">https://www.cateb.cat/delegacio-osona-moianes/</a>
Guild of Installers of Osona	<a href="https://www.aico.cat/">https://www.aico.cat/</a>
Catalan Association of Public Works Construction Companies	<a href="https://surinya.wixsite.com/constcat">https://surinya.wixsite.com/constcat</a>
Chamber of Building Contractors of Catalonia	<a href="http://ccoc.cat/">http://ccoc.cat/</a>
Cluster of Advanced Materials of Catalonia	<a href="https://www.clustermav.com/">https://www.clustermav.com/</a>
CREATION: Osona Entrepreneurship, Innovation and Knowledge Agency	<a href="https://www.creaccio.cat/">https://www.creaccio.cat/</a>
Administration Finques Osona	<a href="https://www.finquesosona.com/">https://www.finquesosona.com/</a>
Business Directory of Osona	<a href="https://empresesosona.cat/inici">https://empresesosona.cat/inici</a>

**Source: Table prepared by Ecoserveis Association with relevant links from each entity**



### 3.3. Examples of renovation measures you can implement and associated costs

Below are some common energy efficiency improvements that are commonly made within households:

#### I. Envelope improvement

**Walls, Roof, and Floor Insulation:** Adding insulating materials to reduce heat loss and energy demand improves indoor temperature stability.

#### II. Closures improvement

**Double or Triple-Glazed Windows and doors:** Installing multi-layered glass with insulating gas in between the layers to enhance insulation and reduce drafts.

#### III. Efficient Heating, Cooling and Domestic Hot water systems

**Condensing Boilers:** High-efficiency boilers that capture and reuse heat from exhaust gases. These are more efficient than traditional boilers for water and space heating.

**Biomass Boilers:** an environmentally friendly and sustainable energy source that produces heat and electricity by burning plant matter. Pellets, logs, wood chips, and other biomass fuels can all be burned in a biomass boiler, which can be linked to a central heating system.

**Heat Pumps:** Devices designed to provide both heating, cooling and or domestic hot water with high energy efficiency.

**Solar Panels:** Generate electricity or heat water using the sun's energy.

#### IV. Appliances Efficiency

**LED Lighting:** Reduces electricity consumption with more efficient light bulbs than traditional lighting.

**Energy-Efficient Appliances:** Home appliances built to consume less energy for daily tasks (washing machines, refrigerators, etc.), which are tagged with A++.<sup>1</sup>

However, focusing on renovation can reveal further structural issues. To have the best results, households should prioritize specific measures, therefore the following should be taken into account:

1. An energy renovation must start by solving dampness (if any) and waterproofing to prevent future structural damage and deterioration of the walls. Also, eliminating all air

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<sup>1</sup> Scaling rate is from A+++ to G (A+++, A++, A+, A, B, C, D, E, F, G)

leakages and installing any additional insulation necessary in weak points of thermal loss, followed by the renovation of windows and doors to avoid heat loss.

2. In the event that you are considering installing solar panels (photovoltaic and thermal), this must be borne in mind when installing waterproofing and insulation and planning the conduits, ensuring that it is not necessary to drill or alter the layers once they have been placed. Insulation systems that already include built-in ducts can be considered. In any case, adequate sealing must be guaranteed to prevent the creation of new thermal bridges.
3. Finally, boilers, appliances and lighting can be changed to more efficient options and, if possible, vegetation can be planted (for example, by relocating already grown trees) to shade the facades exposed to the sun.

This is the most desirable sequence of each renovation, but the economic situation of people in vulnerable situations and the possible slowness of responses from public administrations in the granting of subsidies can influence planning, adjusting it according to the possibilities of each household.

If a lack of funding for renovations is a barrier, changing lighting for more efficient bulbs is certainly the most economical and immediate measure. In a second phase, changing appliances and boilers can be the next step, followed by all of the necessary improvements to the walls and roof. The most expensive measures are the installation of solar collectors or other heating systems, photovoltaic panels, and the replacement of doors and windows.

## Direct Material Costs of Residential Renovations

**Table 2: Summary of the economic effort of the measures**

Improvements	Priority	Approximate cost (VAT included)	Non-renewable primary energy savings <sup>2</sup>
<b>I Envelope</b>			
Dehumidification	High	150 – 2,000 €	N/A (Structural measure)
Waterproofing	High	20 - 70 €/m <sup>2</sup>	N/A (Structural measure)

<sup>2</sup> This item is relevant when applying for Next Generation subsidies

Insulation of walls, roofs and floors and solution of issues creating high thermal losses	High	30 - 180 €/m <sup>2</sup>	30 - 45 %
<b>II Closures</b>			
Replacement of doors and windows	High	200 - 1,800 €/unit	30 - 45 %
<b>III Domestic hot water and heating</b>			
Installation/improvement of gas boilers	Average	2,000 - 4,000 €	30 - 45 %
Installation/improvement of biomass boilers	Average	4,800 - 10,000 €	Around 45%
Installation of solar thermal collectors	Average	2,000 - 7,000 €	Over 60%
Heat pumps	Average	5,000 - 10,000 €/unit	Over 60%
<b>IV Electricity</b>			
Acquisition of efficient appliances	Average	300 - 2,500 €	Up to 30%
Installation of LED bulbs	Low	4 - 50 €/ unit	Less than 30%

**Source: Ecoserveis Association based on average prices in the sector (2024)<sup>3</sup>**

The energy savings in Table 2 are relevant when applying for Next Generation Grants. Usually, if primary energy saving of over 60% is desired, measures must be combined to achieve this. This may not, however, be necessary in low efficient households, as solely replacing an old heating and domestic hot water system with efficient equipment such as a heat pump is enough to reach savings of over 60%.

<sup>3</sup> Sources consulted: **IDAE**: [Technical guides for energy renovation](#) , average prices from suppliers in the renovation sector (Baumit, Sto Ibérica, Weber Saint-Gobain, Plan Reforma, Certicalia), etc. [23]

## *Other costs of residential renovation*

The expenses vary according to the market and the movement of prices at any given time, as well as according to the quantities of material and labour required in each retrofitting.

The professional fees of the technicians of the projects and licenses are calculated with a percentage of this budget, so there are few prices that can be given precisely. Additional municipal taxes also vary between different municipalities.

The Catalan Institute of Energy offers different practical simulators for guidance of costs associated with different renovation measures:

- **Simulator of energy renovation measures for buildings** [3]— It allows the evaluation of different options, providing a first notion of the possible retrofitting options and their technical and economic feasibility.
- **Windows Calculator** [4]— This application helps to estimate the energy and economic savings derived from the installation of efficient windows, contributing to the improvement of the energy efficiency of the building.
- **Map of measures for energy saving and efficiency** [5]— This resource provides information on various actions that can be implemented to improve energy efficiency in buildings, including energy renovation
- **Search engine for energy saving and efficiency projects** [6]— This tool allows you to find energy saving and efficiency projects successfully executed in Catalonia, as a reference for future renovations.

The cost of municipal licences can vary depending on the municipality. Some municipalities offer discounts on the Construction, Installations and Works Tax for energy efficiency or sustainability projects, significantly reducing the final cost of licenses, so it is necessary to consult directly with the corresponding city council for updated information.

In addition to the cost of the license, there are other associated municipal taxes that you should keep in mind:

- **Fee for processing the building permit**
  - This fee covers the administrative costs of managing and approving the license.
  - **Approximate cost:** This can be a percentage of the project's budget or a fixed fee, often between **€50 and €500**, depending on the municipality and the type of work.
- **Occupancy rate of public roads**
  - It is applied if it is necessary to occupy public spaces, such as pavements or streets, with containers, scaffolding or other equipment during the works.

- **Approximate cost:**
  - Containers: Between **€10 and €50 per day**.
  - Scaffolding: Rates according to square meters occupied, often between **€5 and €15 per m<sup>2</sup> per month**.
- **Fee for the management of construction waste**
  - Some municipalities charge a fee for the management and disposal of waste generated during the works, such as rubble or old materials.
  - **Approximate cost:** It may vary depending on the estimated volume of waste, but it is usually between **€0.5 and €2 per cubic metre of waste**.
- **Security deposits**
  - Some municipalities require a refundable deposit as collateral to ensure that regulations will be complied with, including proper waste management.
  - **Amount:** Often proportional to the cost of the project or the volume of waste, with amounts ranging from **€300 to €3,000**, depending on the type of work.
- **Other possible fees**
  - In some cases, there may be specific fees, such as for mandatory technical reports (e.g. building inspections).
  - **Cost:** Variable depending on the municipality.

Although there are many variables in all of the budget items, at an indicative level, some approximations can be made in terms of the economic impact of renovations in order to be able to plan the refurbishment in a way that is considerate of each household's budget. Comparing the ranges of the minimum and maximum prices for each item, taking the average values, and considering the different VAT rates that apply in each item, we obtain the example in Table 3 (assuming that a complete renovation is carried out). The VAT is already included in the estimated average cost.

**Table 3: Example of a budget for a comprehensive energy renovation**

Part of the work	Estimated average cost (€)	VAT rate
Initial energy certificate	250	21%
Refurbishment project	3,000	21%
Optional construction management	3,250	21%
Building license (including ICIO)	2,000	Exempt
Administrative processing fee	250	Exempt
Occupancy rate of public roads	150	Exempt
Waste management fee	150	Exempt
Execution of waterproofing	5,000	10%

Execution of SATE insulation	9,000	10%
Enclosures (windows and doors)	12,000	10%
Installation of renewable energies	10,000	10%
Transport of materials	150	21%
Waste transport	150	21%
Scaffolding rental	500	21%
<b>Total cost before deductions</b>	<b>52.350</b>	
<b>Personal Income Tax deduction</b>	<b>-5.000</b>	
<b>Final cost after deductions</b>	<b>47.350</b>	

**Ecoserveis association with data from various sources**  
(IDAE, supplier companies, professional organizations, municipal websites, etc.)

### 3.4. How to finance the energy renovation of your dwelling

The most difficult barrier to overcome when considering an energy renovation is the economic one. Those who find it difficult to pay utility bills and basic cost-of-living expenses cannot afford the costs of retrofitting or cannot afford less costly actions such as the replacement of old second-hand appliances with new ones that have a high energy efficiency rating, are considered vulnerable households.

Through grant and subsidy programmes added to payment or financing plans, part or all of the energy retrofitting actions can be covered for such households, the latter depending on the applicant's proof of vulnerability.

The Next Generation subsidies, which will be stable in the coming years, are the latest advantage when it comes to overcoming this barrier, so in this section, this grant is explained in more detail, while a summary of other options is also included. To apply to this grant, the **Regional Housing Office of Osona** [2] can help with the bureaucracy, while the enterprises providing **turnkey services** may also apply for the grant in your name.

#### *Next Generation Grants*

The grants aimed at improving the energy efficiency of homes, with funding from the European Next Generation funds [7], are managed by the municipal or county retrofitting offices themselves. The renovation offices may depend on the Catalan Housing Agency, Housing Consortia or other bodies.

The main objective of the **Next Generation EU** funds for the energy renovation of homes is to reduce the consumption of non-renewable primary energy and improve the energy efficiency of multi-family and single-family buildings. The grants are applicable to both primary and second

homes, and can also cover other types of retrofitting, such as accessibility or conservation. There are three grant programmes accessible to citizens [8] [9]:

- Programme 3: Actions at the building level (by communities of owners) [9]
- Programme 4: Actions at the housing level (for private owners) [9]
- Programme 5: Drafting of the retrofitting project and building book (for communities and individuals)

As shown by the Table 4, the grants range from 40% to 80% depending on the saving of non-renewable primary energy and can reach up to 100% in the case of applications by vulnerable households. The relationship between energy savings and measures is detailed in Table 2.

**Table 4. Programmes 3 and 4 of Next Generation grants in Catalonia**

PROGRAMMES 3 AND 4 HOUSEHOLD RETROFITTING
<b>BUILDINGS</b>
Non-Renewable Primary Energy (NRPE) Savings $\geq 30\%$ and $<45\%$ : grant <b>40%</b> . Maximum per household 6.300 € and 56 €/m <sup>2</sup> per establishment
NRPE Savings $\geq 45\%$ and $<60\%$ : grant <b>60%</b> . Maximum per household 11.600 € and 104 €/m <sup>2</sup> per establishment
NRPE Savings $\geq 60\%$ : grant <b>80%</b> . Maximum per household 11.600 € and 104 €/m <sup>2</sup> per establishment
<b>HOUSEHOLDS IN BLOCK</b>
40% of retrofitting cost. Limit 3.000€ per household. Minimum cost 1.000 €/household
NRPE: Non-renewable primary energy In case of economic vulnerability, it can be 100%

**Source: ICAEN**

## *Summary of subsidies and financing*

This section offers a summary, on the one hand, of the subsidies for energy efficiency actions in buildings for different economic capacity profiles (**Table 5**), and on the other, of financing methods and mechanisms which provide the opportunity to loan the money needed for retrofitting with the option to repay it later in regular payments (**Table 6**). The synthesis is based on existing calls and possible financing plans, whether current or closed, but **to ensure the current status of all schemes, contact the Regional Housing Office of Osona for updates** [2].

**Table 5: Summary of grants and subsidies related to energy renovation**

Grant/Subsidy	Description	Economic coverage (%)	Managing body	Validity
<a href="#">Next Generation Grants</a> [9])	Subsidies for the energy retrofitting of buildings, with variable coverage depending on the cost of the project and according to the energy improvement.	Up to 80% and up to 100% for vulnerable	Retrofitting offices	Stable
<a href="#">Personal Income Tax Deductions</a> [10]	Deductions of up to 60% in Personal Income Tax for energy renovation expenses incurred until the end of 2025.	Up to 60%	Tax Agency	End of 2025
IBI or ICIO discounts [11]	For self-consumption photovoltaic installations in the rural and urban environment	Depends on City council	City council	Consult City council website
<a href="#">PREE5000 - ICAEN: Grant programme for the energy retrofitting of buildings</a> [12]	Grants for the energy renovation of buildings, not just residential.	Variable	ICAEN (Catalan Institute of Energy)	Not in force
Social Climate Fund [13]	Financial compensation for those most affected by penalties for CO <sub>2</sub> emissions	Unknown	Corresponding Spanish body, probably Ministry of Transport and Sustainable Mobility	Not available

**Source: Ecoserveis Association**



**Table 6: Summary of financing mechanisms for energy renovation**

Financial products	Description	Coverage (%)	Managing body	Validity
Own funding	Payments according to the economic power of the inhabitants, being able to have a phased retrofitting plan	100%	Particular	Stable
Agreement between the Ministry of Transport and Sustainable Mobility and the Official Credit Institute (MITMA-ICO) [14]	<p>Loan with guarantee for the energy retrofitting of buildings intended for owners or communities of owners who execute renovation works on residential buildings located in Spain and who have received grant from the Autonomous Communities. Conditions: [15]</p> <ul style="list-style-type: none"> <li>• Fixed or variable interest rate, established by table. [16]</li> <li>• 50% MITMA guarantee</li> <li>• Up to 15 years repayment with a 2-year grace period</li> </ul> <p>Valid until 30 November 2025</p>	Up to €30,000 per project	Financial institution	November 30, 2025
Collaboration agreement between the Departments of Economy and Finance and Social Rights, the Housing	Loans for the energy retrofitting of buildings, with bureaucratic facilities due to the demand for grants and subsidies. Conditions: [19]	Up to 100% of the investment made (including VAT),	Financial institution	June 2026

<p>Agency of Catalonia (AHC), the Catalan Institute of Finance (ICF), Avalis de Catalunya SGR and ten entities in the financial sector [17] [18]</p>	<ul style="list-style-type: none"> <li>• <b>Owners' communities:</b> Fixed rate &lt; 5.25% per annum</li> <li>• <b>Individuals:</b> Interest rate &lt; 4% per annum</li> <li>• <b>Building retrofitting agents:</b> Interest rate &lt; 5% per annum + 1.5% discount with guarantee</li> </ul>	<p>depending on the recipient</p>		
<p>Financing through energy service providers</p>	<p><b>On-bill scheme:</b> The electricity supplier assumes the initial investment (being able to make a financing fund such as green bonds or sovereign wealth funds in Spain) and the household pays through the bill related to the electricity meter.</p> <p><b>Turnkey projects:</b> the energy services company is in charge of applying for the subsidies they apply for and they can assume receiving the payment once the work has been completed, even in monthly fees.</p>	<p>Unknown</p>	<p>Energy Services Company</p>	<p>Stable</p>
<p>Funding through the city council</p>	<p>The city council assumes the investment costs and assumes the risk of the credit operation in place of the owners or communities of owners. The investment is recovered with three possibilities:</p> <ul style="list-style-type: none"> <li>• Through monthly payments by the user as far as possible</li> </ul>	<p>Up to 100%</p>	<p>City Council through financing from the European Investment Bank (EIB), INVEST-EU guarantee fund and technical</p>	<p>Not available</p>

	<ul style="list-style-type: none"> <li>• With an entry in the land registry so that you pay</li> <li>• Through a tax figure, with a low interest rate</li> </ul>		advice from the ELENA programme	
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Source: Ecoserveis Association

### 3.5. Possible complexities you may encounter

#### *Addressing complexities in the retrofitting process*

Starting an energy renovation project involves various complexities ranging from financial and technical difficulties to adaptation to regulations, administrative complexity and resistance to change. The **Regional Housing Office of Osona** [2] is the main point of reference that will inform, guide, advise and accompany you in your energy retrofitting processes, offering solutions to the difficulties that may be encountered and unblocking the possible obstacles across the different stages of the project.

Table 7 offers an analysis of possible risks that may emerge during an energy renovation project:

**Table 7: Analysis of possible risks associated with energy renovation**

	RISK	SOLUTION	WHO	HOW
	<b>Delays in obtaining permits.</b>	Consult the professionals at the Energy Retrofitting Office and plan ahead and coordinate with the local authorities to speed up the procedures. Make sure to comply with local regulations to avoid application requirements and verify that the required documentation is complete and well submitted.	Professional staff of the Energy Retrofitting Office.	The professionals of the Regional Housing Office of Osona [2] offer comprehensive support in all phases of the retrofitting project. They are well aware of the phases of the procedures and the usual waiting times, so they help to plan the administrative part in such a way that it best fits the needs.

		<p>In the event of unforeseen events or delays, the building retrofitting agent helps the person with the claim procedures.</p>		
<b>ADMINISTRATIVE COMPLEXITY</b>	<p><b>Long, complex and cumbersome administrative procedures.</b></p>	<p>Consult the professionals of the Energy Retrofitting Office. By going to the specific service and advice points for energy retrofitting, interested parties can obtain clear information about the steps to follow, the legal requirements, and the deadlines. In case of requirements, the Retrofitting Office also helps to unblock.</p>	<p>Professional staff of the Energy Retrofitting Office.</p>	<p>The professional staff of the Energy Retrofitting Office is responsible for carrying out all the support for administrative procedures.</p>
<b>ADMINISTRATIVE COMPLEXITY</b>	<p><b>Changes in regulations.</b></p>	<p>Stay up-to-date with regulations and adapt the retrofitting plan as needed.</p>	<p>Professional staff of the Energy Retrofitting Office.</p>	<p>With each new regulation, the building retrofitting agent provides users with all the relevant information, as soon as possible and in a clear and easy-to-understand wording and format.</p>

SOCIAL CHALLENGES	<b>Resistance of residents to the works.</b>	Continuous communication with residents to explain the benefits and minimise disruptions, offering logistical support when necessary.	The building retrofitting agent. Mediator profile of the Energy Retrofitting Office with support for Property Administrator.	Progressive mediation sessions with residents' associations. Possible awareness campaigns.
	ECONOMIC	<b>Unforeseen cost overruns.</b>	Establish a contingency fund of 10-15% of the total budget to cover any cost overruns.	Professional staff of the Energy Retrofitting Office.
TECHNICAL		<b>Technical issues during implementation.</b>	Hiring reliable technical teams with experience and training in the technologies used, and rigorous monitoring of the project.	Professional staff of the Energy Retrofitting Office.
	<b>Phased retrofitting.</b>	Plan the phases in such a way that they complement each other and do not alter the decisions of the previous phases. Use good quality materials that are suitable for each phase, this will	Professional staff of the Energy Retrofitting Office and technical staff in charge of studying the house.	The Energy Retrofitting Office has a pool of well-referenced local professionals to minimise risks.

<b>EFFECTS</b>		<p>prevent corrections from being made later.</p> <p>Comprehensive retrofitting minimizes this risk since the study is done in its entirety, but it is a more expensive procedure.</p>		
	<b>Effects during retrofitting</b>	<p>Offer alternative accommodation for the duration of the works, as detailed in the following section.</p>	The municipality	<p>Municipally-owned homes can serve as temporary accommodation for residents while the works last: public housing, old doctors' houses, teachers' houses or rectories. You can also consider temporarily rehousing in hotels or tourist apartments or even building low-cost temporary residential modules.</p>
		<p>Financial compensation to cover expenses while residents stay with families or friends.</p>	The municipality	<p>On a monthly calculation of expenditure needs, people who are rehoused in the homes of relatives, friends or other related people can be financially compensated.</p>

		Retrofitting by zones	The construction management and the construction company	Planning the renovation in such a way that while the works last in one part of the house, the residents stay in the other, and so on.
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Source: Ecoserveis Association

### Effects during retrofitting

The management of the effects during the energy renovation phase of buildings is a critical part of ensuring the success of the project. Different possibilities are highlighted below, but in all cases, detailed and careful planning and communication are always the fundamental starting points for any renovation.

It is key that you have a clear work plan, the estimated duration of the works, the working hours and the defined work areas, as well as organize regular meetings with experts to understand each step of the project's progress and resolve any doubts you may have along the way. In this regard, clear communication channels must be established in a bidirectional way. The Regional Housing Office of Osona [2] offers guidance and advice, as well as can be a reference in all matters related to energy retrofitting.

There are different ways to manage the renovation, in the event that the retrofitting has to take longer. Brief interventions, such as a change of windows or doors, can be carried out in a few days, but in the case of more in-depth retrofitting, having alternative housing is an efficient provisional solution to continue with a normal life. Some municipalities offer temporary accommodation while the renovation works take place, including the move to and from the residence. For specific information in your area, contact the **Regional Housing Office of Osona** [2].

## 3.6. Phased planning: Plan your renovation

Congratulations, you have arrived to the end of this guide. Please bear in mind that once you decide to undergo an energy renovation in your home, it is necessary to understand your household's financial capacities to complete the project, taking into account the applicable grants and subsidies. At an economic level, although the subsidies in this guide are received in full at the end of the process, the financing methods mentioned in previous sections allow the funds to be advanced and can make your renovations more feasible. In parallel, you can contact professionals which can generate a complete renovation offer (audit, advice on feasibility and all the different solutions, cost optimization, project completion, construction management) and

construction companies that perform the work. The works require licenses that must be processed at the town hall of the municipality, and the payment of the related fees. Finally, checking the general complexities and drawbacks that the process may cause is crucial to applying mitigation measures and guaranteeing a smooth and satisfying renovation experience.

**Don't forget!** As written throughout this guide, **the Regional Housing Office of Osona [2] can advise** households like yours during this process and help you address the possible complexities that may arise during the different stages of energy renovation.

**Now, it is your turn to plan your renovation!**

<p><b>1. Seek advice</b></p>	<p>What day do I plan a visit or contact the Regional Housing Office of Osona?</p>	<p>Jordi Picañol Villaran  <a href="mailto:jpicanolv@ccosona.cat">jpicanolv@ccosona.cat</a>          Albert Canudas Vilà  <a href="mailto:acanudasv@ccosona.cat">acanudasv@ccosona.cat</a>          Marta Vila Rius  <a href="mailto:mvilar@ccosona.cat">mvilar@ccosona.cat</a>            Phone: 938 834 125          Schedule: Monday to Friday          9h to 14h</p>
<p><b>2. Look for professionals and budgets</b></p>	<p>How many professionals and budgets will you contact and when? Can the professionals apply for grants or will you do it with the Regional Housing Office of Osona?</p>	<p>Check section 3.2 Look for professionals</p>
<p><b>3. Select the most appropriate measures</b></p>	<p>Do you know which measures might work best for you? What measures suit you better in terms of energy savings and economic viability?</p>	<p>Check sections 3.3 Examples of renovation measures you can implement and associated costs and 3.4 How to finance the energy renovation of your dwelling</p>
<p><b>4. Check the main complexities</b></p>	<p>What inconveniences can you find in the process?</p>	<p>Check section 3.5 Possible complexities you may</p>



<b>the process may have</b>		encounter and keep yourself prepared!
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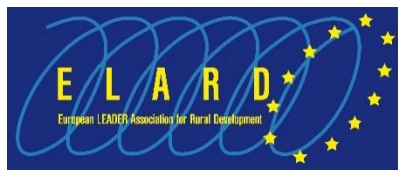
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