EPBDwise

BRINGING EUROPEAN BUILDING POLICY TO LIFE

Development of Renovation Passports: Policy Guidelines for Romania

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About EPBD.wise

EPBD.wise aims to kickstart action to bring to life the recast European Energy Performance of Buildings Directive (EPBD) as part of making EU climate goals a reality. Over the course of three years, project partners worked with public authorities (such as municipalities, energy agencies, etc.) in six European countries: Bulgaria, Greece, Hungary, Poland, Romania and Ukraine. The overarching aim was to ensure the design, implementation and evaluation of key provisions to ensure EU buildings align with climate goals. Starting with investigation of needs and good practices in the six focus countries, EPBD.wise builds replicable models to support the widespread implementation of effective measures across Europe.

For more information, visit the **EPBD.wise website.**

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LIST OF ABBREVIATIONS AND ACRONYMS

API	Application Programming Interface
EED	Energy Efficiency Directive (EU/2023/1791)
EPBD	Energy Performance of Buildings Directive
EPC	Energy performance certificate
EPD	Environmental product declaration
EU	European Union
MEPS	Minimum energy performance standards
NBRP	National building renovation plan
nZEB	Nearly zero-energy building
ROENEF	Asociația pentru promovarea eficienței energetice în clădiri (Romanian association for promoting energy efficiency in buildings)
RP	Renovation passport (EPBD (2024/1275)
ZEB	Zero-emission building

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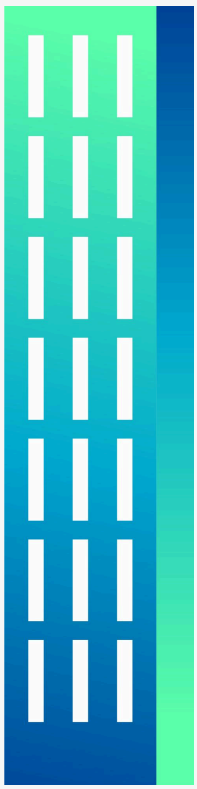
A RENOVATION PASSPORT FRAMEWORK



A1 EPBD Article 12: Renovation passport

Article 12 of the Energy Performance of Buildings Directive (EPBD) presents the renovation passport (RP) as a voluntary tool that Member States can decide to make mandatory. Even if the renovation passport remains voluntary at the building level, it is important to develop the national scheme in such a way that it can be applied efficiently and effectively. Article 12 and the detailed Annex VIII of the EPBD provide the requirements for developing the renovation passport scheme, as well as the links to other policy elements, particularly the energy performance certificate (EPC). By 29 May 2026, Member States must establish a national scheme for renovation passports based on the framework in Annex VIII.

A2 EPBD Annex VIII: Mandatory and voluntary elements

Annex VIII of the EPBD sets out the mandatory requirements for the renovation passport and provides additional information on its optional content. While the scheme is voluntary by default, it is at the discretion of the Member States to enforce it as mandatory. In any case, mandatory elements as shown in Annex VIII must be included.*

The following tables present the four articles of Annex VIII and their requirements as well as suggestions on how to address them.

*Please note that the terminology regarding Annex VIII in this report has not yet been aligned with Commission Notice providing guidance on new or substantially modified provisions of the recast Energy Performance of Buildings Directive (EU) 2024/1275. As was the case during the drafting process, this report continues to use the term 'voluntary' with reference to Annex VIII (instead of 'optional' as used in the Commission Notice).

Table 1 Requirements of the renovation passport and suggestions for how to meet them (paragraph 1)

Paragraph 1	Suggestions to meet requirements
The renovation passport shall include:	
(a) information on the current energy performance of the building	Up-to-date EPC
(b) a graphical representation or graphical representations of the roadmap and its steps for a staged deep renovation	Layout design in connection with (d) and (e); standardised suggestions – cost-effective measures
(c) information on relevant national requirements such as minimum energy performance requirements for buildings, minimum energy performance standards and rules in the Member State on the phasing out of fossil-fuel used in buildings for heating and cooling, including application dates	To be complemented by the more detailed provision of paragraph 2 (b) (ii), and in compliance with NBRP
(d) a succinct explanation on the optimal sequencing of steps	Layout design in connection with (b) and (e); optimal sequencing depends on age of elements and maintenance and repair cycles
(e) information about each step, including:	Layout design in connection with (b) and (d)
(i) the name and description of the renovation measures for the step, including relevant options for the technologies, techniques and materials to be used	To be included in the calculation tool
(ii) the estimated energy savings in primary and final energy consumption, in kWh and in percentage improvement compared to the energy consumption prior to the step	Estimation with calculation tool
(iii) the estimated reduction of operational greenhouse gas emissions	Estimation with calculation tool
(iv) the estimated savings on the energy bill, clearly indicating the assumptions on energy costs used for the calculation	Estimation with calculation tool
(v) the estimated energy performance class of the energy performance certificate to be achieved following completion of the step	Estimation with calculation tool
(f) information about a potential connection to an efficient district heating and cooling system	Display map with building location (link with energy spatial planning)
(g) the share of individual or collective generation and self-consumption of renewable energy estimated to be achieved after the renovation	Display map with building location (link with energy spatial planning)
(h) general information on available options for improving construction products' circularity and for reducing their whole-life-cycle greenhouse gas emissions, as well as wider benefits related to health and comfort, indoor environmental quality and the improved adaptive capacity of the building to climate change;	Link to one-stop shops Relevant for EU Taxonomy Display map with building location and climate change risks (heat island, heavy rains, flooding)

(i) information on available funding and links to the relevant web pages indicating the sources of such funding;	Link to one-stop shops
(j) information on technical advice and advisory services, including contact details and links to the web pages of one-stop shops.	Link to one-stop shops

Table 2 Requirements the renovation passport may include and suggestions on how to proceed (paragraph 2)

Paragraph 2	Suggestions
The renovation passport may include:	
(a) an indicative timing of the steps	To be included; to be considered in layout design
(b) for each step:	
(i) a detailed description of the technologies, techniques and materials to be used, their advantages, disadvantages and costs	Link to one-stop-shops
(ii) how the energy performance of the building would compare to minimum energy performance requirements for buildings undergoing major renovation, nearly zero-energy building and zero-emission building requirements after completion of the step and how the energy performance of the building elements replaced would compare to minimum energy performance requirements for single building elements, where these exist	To be included; to be considered in layout design Necessary for ESG reporting and proving compliance with EU Taxonomy Necessary for national building renovation plan
(iii) the estimated costs for carrying out the step	To be included: only for the next steps in the correct sequence which are planned for immediate implementation
(iv) the estimated payback period for the step, with and without any available financial support	
(v) the estimated time needed to carry out the	
(vi) where available, the reference values on the life-cycle greenhouse gas emissions for the materials and equipment and links to the relevant web pages where they can be found	Link to one-stop shops for environmental product declarations (EPDs)
(vii) the estimated lifetime of measures and the estimated maintenance costs	To be included: information on extension of building life
(c) independent modules on:	
(i) the typical trades necessary or recommended for carrying out energy renovations (architects, advisors, contractors, suppliers and installer, etc.) or links to the relevant web pages	Link to one-stop shops
(ii) a list of relevant architects, advisors, contractors, suppliers or installers in the area, that may include only those fulfilling certain conditions such as matching higher qualification or certification labels or conditions, or links to the relevant web pages	Link to one-stop shops

(iii) the technical conditions needed for an optimal roll-out of low temperature heating	To be included as renovation scenario
(iv) how the renovation steps and additional measures could improve the smart readiness of a building	To be included as renovation scenario
(v) technical and safety requirements for materials and works	Not part of RP, regulated elsewhere
(vi) the underlying assumptions behind the calculations provided or links to the relevant web page where they can be found	Information to be included
(d) information on how to access a digital version of the renovation passport	Information to be included, e.g. link to EPC database
(e) any major renovations made to the building or building unit, as referred to in Article 8①, and any retrofitting or replacement of a building element that forms part of the building envelope and which has a significant impact on the energy performance of the building envelope, as referred to in Article 8②, where such information is made available to the expert carrying out the renovation passport	Information to be included
(f) information related to seismic safety, where such information relevant to the building is made available to the expert	Display a map with building location and risk assessment
(g) upon request of and on the basis of information made available by the current building owner, an attachment containing additional information, such as the adaptability of spaces to evolving needs and any planned renovations.	Up-to-date drawings and building information (architecture, statics, heating and cooling, electrical, plumbing)

Table 3 The renovation passport and the EPC, and suggestions on how to proceed (paragraph 3)

Paragraph 3	Suggestions on how to meet requirements
Regarding the status of the building prior to the renovation steps, the renovation passport shall consider, to the extent possible, information contained in the energy performance certificate.	Link with paragraph 1(a): set the requirement for an up-to-date EPC as the starting point for the RP and make use of the EPC data

Table 4 The set of standard conditions and suggestions on how to proceed (paragraph 4)

Paragraph 4	Suggestions on how to meet requirements
Each metric used for estimating the impact of steps shall be based on a set of standard conditions.	Estimating the impact of renovation steps requires two estimations: 1. Based on user behaviour and energy bill 2. Based on the standard conditions used for the EPC

A3 Connection between renovation passports and energy performance certificates

The RP and EPC are closely connected. Usually, the same dataset about the building, namely up-to-date drawings and building information (architecture, statics, heating and cooling, electrical, plumbing), is the starting point for both the RP and EPC. The RP takes the specific user behaviour and energy cost into account but also needs to provide an assessment under standard conditions, which is in effect an EPC.

There are several options for linking the RP with the EPC:

1. The EPC is extended to cover the requirements of Article 12, including Annex VIII. This also involves extending the existing EPC tool, as the RP will substitute the EPC recommendations. The recommendations part of the EPC tool will need to be revised anyway due to the more detailed requirements of the EPBD; this could be done in a way that also complies with Article 12.
2. The RP is issued separately, necessitating data exchange between the RP and EPC tools to facilitate the process.
3. The digital building logbook is used as the basis for both the RP and the EPC, meaning that an always up-to-date repository of building data is set up and maintained. This can be used as the basis for assessments for RPs and EPCs, as well as ESG reporting or other purposes. The advantage of the third option is that the adaptation of software products will be easier.

In options 1 and 2, data is entered into the calculation directly, meaning that data needs to be re-entered when an updated calculation tool is available. Data exchange between tools is usually hampered by loss of information and the need for corrections. However, the possibilities of reusing EPC data for the renovation passport depend on the quality of EPC data.

There are several issues to be considered:

- EPCs are valid for 10 years, meaning that changes to the building could have taken place during that period, resulting in EPC data being outdated.
- The EPCs issued for existing buildings during rental and sale are often simplified based on the building typology and year of construction (i.e. based on default data), providing little added value for the preparation of the RP.
- Sources of error, such as in the definition of the reference area, can lead to faulty EPCs, which are not always detected by the independent control system.

Regarding EPC revisions, according to EPBD 2024/1275, the focus should be on minimising the scope of interpretation for input data to improve data accuracy and reliability, as this has an impact on the ability to re-use EPC data for the RP. Alternatively, the flow of information could be reversed, with the site visits undertaken during RP preparation feeding into the EPC. This highlights the need for common tools or at least seamless data integration.

A4 Options for implementing renovation passports

The needs of different stakeholders, as well as the wide range of possible uses of the RP, call for a flexible approach to its implementation: the RP can be introduced as part of the EPC or as a standalone document supplementing the EPC.

Integrating the RP into the EPC offers clear advantages in terms of legal framework and standardisation. On the other hand, developing the RP as a standalone document opens up new possibilities for more comprehensive use, particularly with regard to individual adaptations and specific requirements, such as those that exist in the real estate industry or in complex renovation projects. The RP could also be used for existing buildings to demonstrate that they are on track to meet minimum energy performance standards (MEPS) or nearly zero-energy building/zero-emission building (nZEB/ZEB) targets.

In addition, it may be necessary to develop tailored schemes for detached houses, apartment buildings and non-residential buildings because renovation measures, maintenance processes and financing instruments differ. An additional category of public buildings may be necessary to support the respective part of the NBRP and to use the RP as an alternative approach to meet renovation requirements for public buildings in the Energy Efficiency Directive (EU) 2023/1791.

A4.1 The renovation passport as part of the EPC

The intention is for the RP to replace the recommendations provided in the EPC.

The EPC is used for the comparative assessment of buildings regardless of user behaviour and is mandatory in certain cases. The RP, however, explicitly takes user behaviour into account, is intended to facilitate refurbishment, and documents all renovation steps. If the RP is established as an integral part of the EPC, an obligation to update the EPC after each renovation step must be introduced as well.

The main advantage of including the RP within the EPC is reduced cost for operating one scheme instead of two (expenses for software, staff, database, control system).

However, benefits will depend on the reputation of the EPC scheme and the quality of the EPC information, which often go hand in hand: if there are trustworthy EPCs (based on high quality and reliable data), the EPC scheme will tend to have a good reputation. In such an environment, it may make sense to extend the recommendation-related part of the EPC, leveraging the well-established EPC scheme, rather than promoting a new RP scheme.

A4.2 The renovation passport as a standalone document

If the EPC scheme suffers from reputational problems, operating the RP scheme separately may be a viable option, eliminating the problems of the EPC. A separate scheme also makes sense if tailored approaches for certain building types, construction periods and target groups are more effective than the categories provided for in the EPC. Furthermore, the RP has the capacity to address issues that the EPC is not designed to tackle, for example, displaying measures for adapting buildings to climate change. This will serve the broader needs of the real estate industry, helping to prevent assets from becoming stranded.

The main challenge is to define the interface with the renovation planning: where does the renovation passport end and the renovation planning begin?

For the RP to be used effectively by different target groups, it will be necessary to define different types of renovation passports, also in terms of the level of detail. As well as the “simplified renovation passport” proposed in Article 12, the regular renovation passport can be designed with different levels of detail. These levels must be specified and clearly named (for details, see next chapter). Only then can they be implemented effectively.

A5 Renovation passport implementation frameworks suggested by EPBD.wise

Based on the information presented above, four generic options for RP schemes have been identified, which are described in the following sections. They build on different ways to use the voluntary Annex VIII elements in combination with the mandatory elements, tailored to the needs of specific target groups. The acronyms have been chosen to simplify the discussion about the possible implementation frameworks.

The options developed and recommended by the EPBD.wise project are described in more detail in dedicated sub-chapters below:

- RP scheme in compliance with all mandatory requirements, extended with selected voluntary features
- RP scheme with mandatory (and voluntary) requirements extended with features not listed explicitly in Article 12 and Annex VIII, but in line with the intention of the EPBD recast.

A5.1 Four generic RP options

There are four basic options, whereby the first one can be divided into two:

1. RP scheme in compliance with all mandatory requirements
    a. Regular RP – ReReP
    b. Simplified RP – SiReP
2. Extended RP scheme in compliance with all mandatory requirements and extended with all voluntary features – ExReP
3. RP scheme in compliance with all mandatory requirements, extended with selected voluntary features – SEReP
4. RP scheme according to one of the above listed options extended with features not listed explicitly in Article 12 and Annex VIII, but in line with the intention of the EPBD – SEReP+

Table 5 shows the relevance of the various options for the different building types. While ReReP could be used to access financing schemes, SiReP provides a renovation roadmap for homeowners at minimal cost. Depending on the additionally applied criteria, the RP could be used by property evaluators and facility managers, and by public building owners to prove compliance with NBRP and EED-related requirements.

Relevant for RP option 1 to option 4:

Link with the one-stop shop: As shown above (and also in depth in Annex A), there are many requirements related to the provision of information. To ensure that this information is always up to date, and to keep the cost of the RP low, this information should be standardised as much as possible and be provided by the one-stop shop in the area where the building is located.

Ideally, a function of the RP tool is to enable the expert to select from a list of links to further information on the internet, e.g. addresses of one-stop shops that are updated regularly and, by choice, are incorporated into the specific RP.

Link with the digital building logbook: The digital building logbook will be the central source of information for buildings in the future, and RP programmes must reflect relevant developments. Processes will differ depending on who maintains the digital building logbook.

There are basically two options:

- Government-led digital building logbook (public administration oversight)
- Private-sector or hybrid digital building logbook (collaboration between public and private entities and/or the chambers of engineers/architects)

Table 5 Various RP schemes and their relevance for different building types. As ReReP is included in the ExReP, SEReP and SEReP+ variants, these will also be recognised by the financing institutions.

<table>
<tr><th></th><th>ReReP</th><th>SiReP</th><th>ExReP</th><th>SEReP</th><th>SEReP+</th></tr>
<tr><td colspan="6">Non-residential</td></tr>
<tr><td>Detached house</td><td>Financing</td><td rowspan="2">Renovation roadmap at minimum cost for home-owners</td><td rowspan="2">Covers pre-planning stage; could be done on demand</td><td></td><td></td></tr>
<tr><td>Apartment building</td><td>Financing</td><td colspan="2">As part of maintenance and repair plan: could be done by inhouse qualified expert (facility manager)

Provides input for property valuation</td></tr>
<tr><td colspan="6">Non-residential</td></tr>
<tr><td>Office</td><td>Financing</td><td></td><td rowspan="3">Covers the pre-planning stage; could be done on demand</td><td colspan="2" rowspan="3">As part of the maintenance and repair plan: could be done by inhouse qualified expert (facility manager)

Provides input for property valuation</td></tr>
<tr><td>Health</td><td>Financing</td><td></td></tr>
<tr><td>Educational</td><td>Financing</td><td></td></tr>
<tr><td colspan="6">Public</td></tr>
<tr><td>Public buildings</td><td>Financing</td><td></td><td></td><td></td><td>Covers NBRP and EED-related obligations</td></tr>
</table>

Generic specifications of option 3 (SEReP) and option 4 (SEReP+) are shown in the next subchapters, because these are the options recommended by EPBD.wise. They are considered essential by EPBD.wise for the success of a renovation passport scheme on the real estate market. Mandatory RP elements according to Annex VIII alone do not meet the needs of important target groups such as facility managers and property valuators, but the inclusion of all voluntary RP elements according to Annex VIII makes the RP expensive, and some elements that are considered crucial to success (e.g. validity period) are even missing from these voluntary elements.

A5.2 Recommended option: SEReP

The SEReP scheme complies with all mandatory requirements and is extended with selected voluntary features. The recommended selected voluntary features and why they are chosen are shown in Table 6 below.

Table 6 Voluntary features of paragraph 2 Annex VIII to be included in RP scheme

Relevant features of paragraph 2	Suggestions on how to proceed	Justification
(a) an indicative timing of the steps	To be included; to be considered in layout design	Useful information for building owners, facility managers; useful information for NBRP
(b) for each step:		
(ii) how the energy performance of the building would compare to minimum energy performance requirements for buildings undergoing major renovation, nearly zero-energy building and zero-emission building requirements after completion of the step and how the energy performance of the building elements replaced would compare to minimum energy performance requirements for single building elements, where these exist	To be included; to be considered in layout design	Necessary for ESG reporting and proving compliance with EU Taxonomy Necessary for NBRP
(iii) the estimated costs for carrying out the step	To be included: only for the next measures in the correct sequence which are planned for immediate implementation	Necessary information for building owners, facility managers
(iv) the estimated payback period for the step, with and without any available financial support		
(v) the estimated time needed to carry out the step		
(vii) the estimated lifetime of measures and the estimated maintenance costs	To be included: information on extension of building life	Relevant information for property valuation (and thus also financing institutions)
(iii) the technical conditions needed for an optimal roll-out of low temperature heating	To be included as renovation scenario; standardised as much as possible	Necessary to prevent owners from installing inefficient heat pumps
(iv) how the renovation steps and additional measures could improve the smart readiness of a building	To be included as renovation scenario; standardised as much as possible	Necessary to convince building owners to contribute to grid flexibility

(vi) the underlying assumptions behind the calculations provided or links to the relevant web page where they can be found	To be included	Display the type of RP, data sources and tools applied
(d) information on how to access a digital version of the renovation passport	To be included	Link to EPC database and information on how to access

A5.3 Recommended option: SEReP+

The SEReP+ scheme is extended with features not listed explicitly in Article 12 and Annex VIII, but in line with the intention of the EPBD.

Necessary features to achieve the expected impact on the property market, which are not listed explicitly in Article 12 and Annex VIII, are:

1. The RP is updated in the EPC database and the digital building logbook (if available) after each renovation step.
2. The updated RP contains detailed information about the next renovation step, and the timing of the planned implementation.
3. The RP has a validity of five years. If no measures are implemented within this period, the RP becomes invalid.

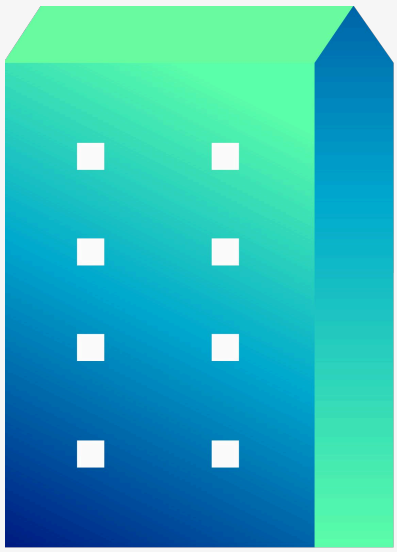
The first aspect ensures that the current energy performance condition of the renovated building is represented in the EPC database. This is important because the EPC database becomes the central data repository for developing and monitoring policies, most importantly the NBRP.

The long time horizon until 2050 will bring technological and economic changes, making it impossible to specify technical and economic details for renovation steps in 10 or 20 years. However, it is possible to provide detailed information on the next renovation step within a period of five years. Describing the next renovation step in more detail makes it easier for the building owner to take the necessary actions, increasing the likelihood of implementation.

The third aspect is also related to the long time horizon. If the next renovation step is not implemented promptly, the details will likely become obsolete. The five-year period was chosen to achieve a balance between external developments and the effort required to prepare the RP; it would also be possible to set a shorter validity period of, for example, three years.

2

GUIDELINES FOR IMPLEMENTING THE RENOVATION PASSPORT IN ROMANIA



Executive summary

As part of the Energy Performance of Buildings Directive (2024/1275), the renovation passport is a key tool designed to guide building owners through the process of staged deep renovation towards zero-emission standards. The RP complements other EPBD instruments such as the energy performance certificate (EPC), digital building logbooks, minimum energy performance standards (MEPS) and national building renovation plans (NBRPs). This document presents guidance implementation recommendations based on national consultations and stakeholder input from Romania. It outlines how the RP can be effectively integrated into the country's existing policy, regulatory and technical frameworks.

In Romania, existing and future systems such as EPCs and digital building tools provide a foundation for integrating the RP. However, implementation will depend on the alignment of national policies and institutional roles. For example, in Romania, private and non-profit organisations will be key for regional delivery.

Key recommendations include the need for clear technical definitions, software compatibility, and training programmes for local stakeholders. A phased roll-out is recommended, starting with pilot projects, linking the RP to EPC systems, and eventually integrating it into national digital building logbooks. The selection of the appropriate level of detail of the RP scheme, as outlined in this report, should be based on a country's specific context and building stock. Support mechanisms, including financial incentives, one-stop shops and uniform data interfaces, are critical success factors.

Stakeholder concerns were analysed through questionnaires, roundtables and policy forums, leading to tailored guidelines for country-specific RP implementation. To address challenges in distinguishing mandatory from voluntary elements in RP implementation, new terminology was introduced to clarify definitions and enable targeted implementation based on stakeholder needs and building types.

The core focus is on the development of a step-by-step policy roadmap for RP implementation. Key steps are to i) provide technical and policy support, ii) pilot programmes to test and refine the implementation process, and iii) make iterative updates to accommodate evolving recommendations.

The guidance reflects and accommodates ongoing upgrades to Romania's EPC-related digital infrastructure. This will facilitate RP implementation. However, due to uncertainties, a modular approach based on a strategy that avoids technical and economic lock-in effects is suggested. It is also essential to expand subsidies, grants and innovative financing options for deep renovations, while considering the different situations in cities and rural areas.

1 Introduction

This guidance has been developed to address the specific needs of Romania in the implementation of the renovation passport according to the EPBD (2024/1275). It aims to provide a structured and comprehensive approach to the design, execution, monitoring and policy evaluation of the RP, ensuring its effective integration into Romania's regulatory and financial frameworks. Given the unique characteristics of the country's building stock, energy performance challenges and policy landscape, this document outlines key recommendations and strategic actions tailored to Romania's specific needs.

The guidance focuses on the following core aspects:

- Developing a policy roadmap that provides step-by-step guidance for the implementation of the RP.
- Identifying key levers and potential obstacles that could influence the adoption and efficiency of the RP.
- Exploring interlinkages and synergies between the RP and other policy instruments, ensuring coherence within Romania's broader renovation and energy efficiency strategies.

This report consolidates insights derived from Romania's policy priorities and existing challenges, offering a practical and evidence-based framework for the adoption of RPs. By aligning with national energy efficiency targets and EU directives, the implementation of the RP in Romania aims to facilitate long-term renovation planning, enhance regulatory compliance, and support the transition towards a sustainable and resilient building sector.

1.1 Key actors for successful renovation passport implementation in Romania

Effective implementation requires the involvement of key stakeholders who contribute to policy development, technical expertise and knowledge transfer. These actors play a critical role in ensuring that the RP aligns with national and EU energy efficiency goals, facilitating a structured and coordinated approach to building renovation.

1.2 Responsible ministries

The responsible ministries are expected to play a central role in defining the strategic framework for RP implementation. Key open questions include:

- How the RP will be integrated into national and EU energy policies
- What financial and legislative measures will support its adoption
- How monitoring and evaluation will be structured to assess energy efficiency impacts
- The level of inter-ministerial cooperation needed to align energy, housing and financial policies.

Clarifying these issues is essential for ensuring a cohesive and effective implementation strategy.

1.3 Key expert organisations

The Association for the Promoting of Energy Efficiency in Buildings (ROENEF) serves as the central expert body for energy-efficient building practices in Romania. It is also involved in the relevant working group by Minister Order for EPBD implementation. ROENEF will support central and regional authorities in defining technical guidelines, financing mechanisms and implementation strategies for the implementation of RP both in urban and rural areas.
It acts as a primary resource for technical guidance, offering expertise in:

- Sustainable building planning and energy-efficient renovation strategies
- Developing training programmes and capacity-building initiatives for professionals in the construction and energy sectors
- Supporting public awareness campaigns to promote the benefits of the RP
- Facilitating collaboration between private and public stakeholders to streamline RP implementation.

ROENEF has worked directly with the Ministry of Regional Development, Ministry of Energy, Ministry of Environment and Ministry of Investment and European Projects since 2019, providing technical and policy support.

1.4 Outcomes of the Renocally project

The Renocally[1] project, completed in January 2025, supported policymakers from Bulgaria, Romania and Slovakia in implementing building renovation passports. It provides the foundation to further develop approaches to meet the requirements of EPBD Article 12 on renovation passports in Romania.

The outcomes of the project could also help in:

- Providing technological and methodological support based on best practices from Romania and other Eastern European countries
- Facilitating knowledge transfer and innovation to enhance the efficiency and effectiveness of RP deployment
- Creating a platform for stakeholder dialogue, ensuring coordination among government agencies, industry professionals and financial institutions.

2 Identified policy needs

Policy needs were identified based on discussions with key stakeholders, including ROENEF, ministries and industry representatives. The findings highlight critical areas requiring policy development, such as financial support, professional training and data integration.

2.1 Overview of support needed

Specifically, support is needed in the following areas:

- Best practice exchange on achieving deep renovations
- Financing models for cost-effective implementation
- Integration with the EPC system, substituting general recommendations with precise, cost-effective renovation plans
- Ensuring the RP remains affordable and accessible.

More details are provided in Table 7.

1. Renocally, project funded by the Federal Ministry for Economic Affairs and Climate Action and the European Climate Initiative EUKI, duration 02/2023–01/2025, www.euki.de/en/euki-projects/renocally-municipal-renovation-action-plans

Table 7 Overview of identified policy needs

Policy need	Description
Financing	Expanding subsidies, grants and other financing options, including private financing dedicated to energy-efficient renovations; introducing new incentives for deeper renovations.
Links to EPCs	Shortage of professionals and experts to support RP integration. Lack of structured training programmes to build expertise in RP and EPC-related methodologies. Ensuring quality.
Information and communication	Presenting best practice examples to government stakeholders to demonstrate RP benefits. Education campaigns to inform the public about energy-efficient renovations and RP advantages.
Energy audits	Becoming an energy auditor in Romania requires a technical university degree and work experience. Guidance on training and capacity-building to enhance the number of qualified professionals. Ensuring quality.
Data acquisition and analysis	ROENEF has conducted research to promote energy-efficient technologies and now aims to establish standards for deep renovation and accelerate the renovation process. However, there is a lack of relevant data on the number of worst-performing buildings. Need for systematic data analysis to support informed policymaking.
Learning from other projects	Opportunities to build on best practices from other EU countries instead of designing the RP system from scratch. Existing EPC and RP systems, linked with digital logbooks and renovation schedules, can be adapted for the Romanian context. Lessons learned from other funded projects can support efficient, cost-effective implementation, minimising administrative and financial burdens.

3 The scope of the renovation passport in Romania

The general guidance on implementing RP schemes explains the benefits of combining mandatory elements of Annex VIII with different voluntary elements for specific target groups. It also explains the two basic options of 1. introducing the RP as part of the EPC, and 2. introducing the RP as an additional document to complement the EPC. The RP schemes suggested by EPBD.wise (SEReP and SEReP+) are also described in more detail. This information is relevant for determining the scope of the country-specific approach to implementing the RP.

3.1 Integration of renovation passports with energy performance certificates

In Romania, the integration of RPs with EPCs is a crucial step toward enhancing the energy efficiency of the building stock and ensuring compliance with national and EU regulations. The RP serves as a structured framework that provides long-term planning for staged renovations, moving beyond the static nature of EPCs by embedding actionable renovation recommendations tailored to specific buildings. In Romania, EPCs are a mandatory requirement for certain building categories, primarily those undergoing sale, lease or major renovation.

However, the extent to which rural buildings in small villages and certain public structures comply with EPC regulations requires further assessment.

This raises the question of how RP implementation can effectively support renovation efforts in these building categories, ensuring that even isolated and energy-inefficient buildings benefit from structured renovation planning.

A key component of RP-EPC integration is the development of digital tools to streamline the process. The Renocally project has supported this effort by facilitating knowledge exchange, providing standardised methodologies, and leveraging digital platforms for integrating RPs into the existing EPC framework. The role of ROENEF could be instrumental in coordinating stakeholders, promoting best practices and ensuring RP adoption.

3.2 Renovation passport implementation approaches

A step-by-step approach is recommended, starting with a system that meets the mandatory requirements. Later, once the national building register has been put into operation, the inclusion of additional voluntary requirements could represent a significant improvement.

3.3 Building stock clustering and RP relevance

Romania's building stock can be categorised into clusters based on renovation potential and strategic priorities:

1. **Public buildings:** Obligations under the NBRP and EED serve as the foundation for operationalising the SEReP+ framework (see chapter 5).
2. **Rural buildings:** Romania's small villages and widely dispersed rural communities present significant challenges for energy-efficient renovations. Limited infrastructure, financial constraints and difficulties in reaching homeowners necessitate tailored solutions, including mobile advisory services (like the successful ROENEF Caravan, which travelled through the countryside), local renovation hubs and targeted subsidy programmes.
3. **Isolated residential buildings:** Many homes in Romania's rural landscapes lack basic energy efficiency measures, making deep renovation efforts crucial.

The SEReP framework (see chapter 5) could support the phased renovation of rural buildings and isolated residential buildings, ensuring gradual improvements aligned with available financial support and workforce capacity.

3.4 Best practice example: build on digital tools for RP-EPC integration

The Renocally project offers a scalable model for integrating the RP within EPC frameworks, enabling strategic planning, financial feasibility and long-term energy efficiency improvements. Based on this foundation, further development is necessary to meet the requirements of EPBD Article 12 on renovation passports. A case study approach, like Greece's Benaki Museum model under iBroad2EPC,[2] could be adapted for Romania.

Such a methodology would include:

- Stepwise renovation recommendations linked to EPC assessments, addressing short-, medium- and long-term measures.

2. Presentation by Eleftheria Touloupaki (INZEB) at the TIMEPAC Conference in Barcelona in October 2024: https://timepac.eu/workshop/timepac-final-conference

- Cost estimation modules that provide transparent financial planning for each renovation step.
- Energy performance tracking, illustrating how incremental renovations improve EPC ratings over time.
- Integration with digital logbooks and monitoring tools to ensure real-time progress tracking and compliance verification.

By leveraging existing EU best practices, Romania can develop a cost-effective, structured RP framework that integrates with EPCs and digital building logbooks (see section 8).

4 Getting started with tailoring the renovation passport for Romania

4.1 Identify and secure sources of support

The successful implementation of the RP in Romania requires a structured approach backed by financial, technical and institutional support. The following key stakeholders provide essential backing for this initiative:

- Government ministries: Responsible for policy direction, legislative integration and financial frameworks supporting the RP.
- ROENEF or an organisation with a similar profile: Acts as a central expert organisation in energy efficiency, providing technical expertise, stakeholder coordination and awareness-building.
- Renocally project results and involved organisations: Facilitate best practice transfer, digital tool development and EPBD alignment.
- Regional and local authorities: Play a crucial role in ensuring RP implementation reaches both urban and rural communities.
- Financial institutions and EU funds: Provide grants, subsidies and investment mechanisms to support energy-efficient renovations.

4.2 Qualified organisations for addressing regional disparities and socioeconomic challenges

Romania's building renovation challenges vary significantly between urban centres and rural communities. While cities have a higher concentration of renovation professionals and financing options, rural areas face barriers such as limited infrastructure, financial constraints and access to expertise. Wide geographic dispersion and economic disparities require targeted renovation strategies that balance energy efficiency, affordability and accessibility.

ROENEF can facilitate this process by providing technical knowledge, policy alignment and stakeholder engagement. Through its collaboration with government agencies, private sector actors and EU-funded projects, ROENEF acts as a bridge between policy and practical implementation, ensuring that all building types – from large public buildings to isolated rural homes – are included in the national renovation framework.

ROENEF has undertaken proactive measures to promote energy efficiency nationwide. A notable initiative is the ROENEF Caravan, a national project launched in partnership with ING Bank Romania and supported by local authorities. This project involved a series of events across six Romanian cities – Iași, Constanța, Brașov, Oradea, Cluj-Napoca and Timișoara – showcasing state-of-the-art solutions for enhancing energy efficiency in buildings.

Central to these events was the display of a mobile nZEB demonstration house, which provided the public with tangible examples of energy-efficient technologies and practices[3].

4.3 Select the appropriate renovation passport implementation option(s)

Although the RP system will probably be limited to mandatory requirements initially, the integration of voluntary requirements at a later stage should be considered from the outset to avoid lock-in effects in the development of instruments and procedures. The following steps should be completed:

STEP 1:
EVALUATE REGULATORY REQUIREMENTS (ARTICLE 12 – ANNEX VIII)

- Thoroughly assess the mandatory requirements outlined in Article 12 and Annex VIII.
- Identify voluntary requirements that could enhance renovation effectiveness under specific conditions.
- Plan for regular updates and refinements to RP recommendations after each implementation phase.

STEP 2:
COORDINATE WITH THE GENERAL ASSOCIATION OF ENGINEERS IN ROMANIA (AGIR – NO MANDATORY REGISTRATION)

- Conduct a structured engagement process with technical professionals to ensure feasibility and compliance.
- Discuss cost implications, technical standards and digital integration.
- Refine the RP framework through iterative consultations with engineering experts and policymakers.

STEP 3:
DEFINE A SCHEDULE FOR THE RP SCHEME WHICH HAS THE CAPACITY TO INCLUDE VOLUNTARY REQUIREMENTS

Address the following mandatory requirements:

- **Regulatory framework:** A clear legal mandate integrating the RP with Romania's existing energy policies and renovation programmes.
- **Technical guidelines:** A detailed renovation roadmap, including step-by-step instructions for compliance.
- **Monitoring and impact assessment:** Tools to track energy efficiency improvements, emissions reductions and cost savings.
- **Integration with existing EPC systems:** Ensure compatibility with digital building logbooks and national databases.
- **Stakeholder coordination:** Define roles for government agencies, engineering bodies and financial institutions.

In addition, consider selected voluntary requirements, such as:

- **Interactive digital features:** A dynamic RP platform for real-time updates and user interactivity.
- **Targeted support for rural areas:** Special funding mechanisms and mobile advisory services to support renovations in isolated villages.
- **Climate resilience measures:** Seismic safety, flood risk and adaptation strategies for different building types.

3. Source: www.sustainability-today.ro/index.php/2024/09/09/roenef-together-with-ing-bank-romania-and-local-authorities-launches-a-national-project-dedicated-to-promoting-energy-efficiency-in-buildings

5 Developing a roadmap to implement the renovation passport

The following roadmap outlines key steps and recommended procedures to enable Romania to effectively integrate the RP into national energy policies, ensuring compliance with EU directives while addressing local renovation needs.

Collaboration between ministries, ROENEF or a similar institution, stakeholders involved in Renocally, and financial institutions will be key to overcoming implementation challenges and fostering a sustainable and inclusive renovation strategy. The Ministry of Regional Development has already established a formal working group through a ministerial order for the transposition of the revised EPBD. The aim is to update Law 372, which transposes the EPBD into Romanian legislation. ROENEF is part of the working group. The methodology for calculating the energy performance of buildings should then be updated accordingly.

5.1 Institutional framework and governance

- Strengthen inter-ministerial coordination and ensure that ongoing amendments to the Energy Performance of Buildings Law (Law 372/2005) embed the RP concept within the EPC framework, ensuring consistent data on energy use, CO_2eq emissions and recommended renovation measures.
- Establish a clear coordination mechanism between the Ministry of Environment, the Ministry of Energy, and the General Association of Engineers in Romania (AGIR). Allocate more responsibilities to AGIR and the Association of Energy Auditors for buildings.
- Develop a standardised digital platform integrating the RP with existing EPC software and databases.
- Create a quality assurance system overseen by a dedicated organisation. Government representatives, the energy auditor association and industry associations should form a new organisation to monitor RP implementation and performance. This is necessary because the current state inspector of construction has limited responsibility, capacity and expertise.

5.2 Technical implementation

- **Design a modular RP structure allowing for:**
  - Integration with Romanian EPC regulations and digital building logbook approaches (see section 8)
  - Compatibility with existing and planned EPC and building databases, and energy efficiency assessment tools
  - Flexibility to accommodate both minor and deep renovation scenarios.
- Implement a standardised assessment methodology aligned with Romanian building typologies and climate conditions.
- Adopt a stepwise implementation approach: start with a national RP scheme fulfilling mandatory EPBD requirements, then expand to an enhanced model including voluntary requirements once the national building data infrastructure becomes fully operational.
- Ensure interoperability and data quality through harmonised reporting standards and digital exchange protocols.

5.3 Capacity building and support

- **Develop specialised training programmes through ROENEF or a similar institution for:**

    - Energy auditors
    - Technical professionals and engineers
    - Other building sector stakeholders (e.g. property owners, facility managers, construction companies, skilled trades, public administration)
- Create a technical help desk operated by ROENEF or another institution to support stakeholders in navigating RP implementation.
- Strengthen the one-stop shop network (see section 7) by improving staffing and financing. Integrate best-practice examples such as the ROENEF Caravan and demonstration one-stop shops, and collaborate closely with energy-auditor and architect and engineering associations.

5.4 Financial integration

- Link the RP to existing funding mechanisms, including EU funds and national renovation grants.
- Develop new financial instruments to support staged renovations, ensuring a cost-effective renovation process.
- Create incentives for early adopters to encourage uptake of the RP in residential and public buildings.
- Coordinate RP-related financing with the Social Climate Fund and affordable-housing programmes to target low-income and vulnerable households effectively.

5.5 Practical implementation steps

- **Phase 1:** Pilot programme focusing on public buildings and high-energy-consuming facilities.
- **Phase 2:** Expansion of pilot programme to residential buildings, prioritising multi-family units and rural homes.
- **Phase 3:** Full-scale implementation with support mechanisms and continuous monitoring.

In addition, it is important to promote collaboration between municipalities, one-stop shops and professional associations to strengthen local administrative capacity and ensure coherent application across regions.

5.6 Monitoring and evaluation

- **Establish key performance indicators (KPIs) to track:**
    - Energy efficiency improvements
    - Greenhouse gas emissions reductions
    - Financial viability of renovation steps.
- Develop a feedback mechanism to refine RP recommendations based on user experience.
- Implement a reporting system for policy evaluation and continuous improvement.
- Use data-driven insights to improve renovation planning, increase transparency and strengthen citizen trust in the RP process.

5.7 Special considerations

In Romania, a national building register is being established. The ministry is in the process of procuring this important tool, which will include an EPC database and cadastral register.

However, numerous challenges remain. The modular RP approach is important so as not to lose time and to maintain flexibility for iterative development.

In addition, the RP scheme should be adjusted to address the following aspects:

- The high percentage of aging building stock requiring deep renovations.
- The geographical challenges of rural and isolated areas, where access to renovation services is limited.
- Economic disparities, ensuring affordability (financial incentives and subsidies) for low-income households.
- Integration of climate resilience measures, particularly for regions prone to extreme weather conditions.

The structured approach to RP implementation in Romania must balance mandatory requirements with adaptable, region-specific solutions. By combining government support, technical expertise from ROENEF, digital innovation through the Renocally project and/or iBRoad2EPC,[4] and targeted financial mechanisms, Romania can overcome geographic and economic barriers to large-scale building renovations.

6 Affordable access to hardware and software

To enable cost-effective implementation, digital tools and infrastructure must be accessible and affordable for all stakeholders, including policymakers, professionals and building owners. This requires a smart design to minimise set-up and maintenance costs. In adjusting and setting up the EPC- and RP-related digital infrastructure in Romania, the aspects below should be considered to avoid lock-in effects in software development.

6.1 Technical infrastructure requirements

General technical infrastructure requirements are listed below, including a qualitative assessment regarding their impact:

- Database infrastructure: Enhanced database capacity for RP data (high impact).
- Software integration: API integration with RP modules (high impact).
- User interface: New RP interface plus mobile support (medium impact).
- Data fields: Additional fields for renovation steps (high impact).
- Hardware requirements: Enhanced processing capacity (medium impact).
- Security infrastructure: Advanced encryption and access control (high impact).
- Training platform: Comprehensive e-learning system (medium impact).
- Back-up systems: Cloud-based redundancy (medium impact).

With regard to alignment with the EPC-related digital infrastructure, the following technical requirements are important:

- Building information: Additional fields for building typology, seismic risk and rural-specific characteristics (medium impact).
- Energy performance: Current and target performance levels, step-wise improvements (high impact).
- Renovation steps: Detailed renovation measures, sequencing, dependencies (high impact).
- Cost estimates: Cost per step, funding options, payback periods (medium impact).

4. ibroad2epc.eu

- Technical requirements: Material specifications, technical standards, compliance (medium impact).
- Implementation timeline: Step-wise implementation schedule, milestones (low impact).
- Monitoring data: Progress tracking, performance verification (high impact).
- Documentation: Technical documentation, permits, certificates (medium impact).

6.2 Next steps towards implementation in Romania

There are two important steps towards RP implementation in Romania:

Assessment of existing digital infrastructure:

- Conduct a comprehensive review of the national software used for energy performance calculations.
- Identify necessary upgrades to ensure compatibility with the new requirements of the EPBD.
- Evaluate potential cost implications and seek funding mechanisms to ensure affordability for professionals and building owners.

Adaptation of EPC database:

- Modify and expand the EPC database to incorporate new data fields required for the RP framework.
- Ensure seamless integration with RP tools to facilitate automated data input and minimise administrative burden.
- Include additional data categories, such as:
  - Step-by-step renovation measures aligned with RP requirements
  - Projected energy savings for each renovation phase
  - CO_2eq emissions reduction estimates to support national climate targets
  - Cost-benefit analysis for different renovation strategies
  - Funding eligibility criteria based on building characteristics and renovation needs

Ensuring affordable access to hardware and software is a precondition for effective energy renovations in Romania. By improving the national EPC system in terms of quality and training, integrating RPs with digital tools and leveraging open-source technologies, Romania can streamline the renovation process, improve energy performance tracking, and support professionals and building owners in implementing cost-effective, phased renovation strategies. Collaboration with ROENEF and stakeholders involved in the Renocally project will be essential in achieving these objectives.

7 One-stop shops

One-stop shops (OSS) serve as centralised service points providing building owners, professionals and policymakers with comprehensive guidance, technical support and administrative assistance for building renovation projects. In Romania, the one-stop shop model is particularly important for rural areas and small villages, where access to technical expertise, financial support and renovation services is often limited.

7.1 One-stop shops and renovation passport schemes

By linking one-stop shops with RPs, experts and homeowners can easily access a regularly updated database of funding opportunities, regulatory requirements and technical recommendations.

This integration helps standardise information and streamline the renovation process, ensuring cost efficiency and broader access to renovation programmes.

One-stop shops play a critical role in making the RP accessible and cost-efficient by:

- Providing up-to-date, standardised information on renovation procedures, regulatory updates and best practices
- Reducing administrative complexity by offering pre-approved, structured renovation roadmaps
- Supporting financial accessibility through guidance on subsidies, grants and funding programmes
- Facilitating capacity-building programmes for energy auditors, engineers and technical professionals

Integrating one-stop shops with the RP framework is essential for ensuring efficient, cost-effective and widespread adoption of building renovation strategies in Romania. By centralising information, enhancing digital accessibility and tailoring regional implementation, one-stop shops can effectively bridge the gap between technical requirements, financial incentives and end-user engagement.

7.2 One-stop shop network structure in Romania

In 2024, a national network of one-stop shops was established by law under each county council. However, this network has limited capacity in terms of staff and responsibility: one or two people are appointed by the county council to act as an intermediate body or management authority to implement two specific financing schemes for renovating low-income households.

Because of Romania's rural landscapes, dispersed population and limited capacity at local council level present challenges, the one-stop shop network should be adapted to meet regional and demographic needs. Partnerships with organisations such as industry associations for energy auditors, architects and engineers are crucial.

Romania's one-stop shop network comprises:

- Central hubs: Established in major urban centres, providing national-level policy and technical coordination.
- Regional centres: Located in county capitals to support local administrations and professionals.
- Mobile and digital units: Designed to reach remote villages and rural communities, ensuring accessibility even in sparsely populated areas. Best practices at national level (e.g. ROENEF Caravan, demonstration one-stop shops, etc.) should be integrated.

7.3 Key implementation steps for one-stop shops in Romania

- **Structural integration with national energy and renovation policies**
  - Align operations with Romania's Energy Efficiency Action Plan.
  - Integrate functionalities with EPC-related tools.
  - Ensure one-stop shops act as coordinators between ministries and technical bodies.
- **Digitalisation and cost optimisation**
  - Establish a centralised, digital one-stop shop platform linked to national and EU renovation programmes.

- Optimize efficiency through automated information updates and user-friendly interfaces.

- **Enhancing stakeholder engagement and capacity building**
  - Develop training programmes for professionals on RP methodology, EPC compliance and funding mechanisms and ensure quality.
  - Promote public awareness campaigns to encourage homeowner participation in RP programmes.

Through strategic collaboration with ROENEF Caravan, stakeholders involved in Renocally, and national ministries, Romania can create a one-stop shop system that reduces renovation costs, enhances energy efficiency and ensures inclusive access to renovation services, especially in rural areas where the need is greatest.

8 Digital building logbooks

The digital building logbook is envisioned as the central repository for all building-related information, making it an essential tool for future renovations. By integrating key data points, such as maintenance records, energy performance metrics, renovation history and compliance documents, the digital building logbook provides a reliable and transparent foundation for the RP framework. The digital building logbook can be the backbone of Romania's future building stock information system, ensuring data consistency, transparency and efficiency in renovation strategies.

8.1 Set-up and maintenance of the digital building logbook

There are two possible models of digital building logbook, and the design impacts on the cost of set-up and maintenance, data reliability and accessibility:

a **Government-led (public administration oversight)**

- The digital building logbook is part of the national EPC/building database.
- The RP framework is directly linked to the national EPC/building database, ensuring standardisation and regulatory compliance.
- Policy-driven updates – such as new EPC requirements or financial incentives – are automatically reflected in the RP system.
- Publicly accessible data could enhance market transparency, improving property valuation based on energy efficiency levels.

b **Private-sector or hybrid (public-private collaboration)**

- Data security and governance must be a priority, ensuring data integrity and privacy protections.
- A hybrid model can accelerate digitalisation efforts while maintaining government oversight for policy compliance.

Integrating digital building logbooks with RPs enhances efficiency by:

- Providing baseline data on building conditions, allowing for accurate renovation planning
- Ensuring regulatory compliance by tracking legal and policy updates
- Offering real-time data exchange between the EPC system, RP framework and digital databases

8.2 Key points of renovation passport–digital building logbook integration and implementation

By integrating RPs with the digital building logbook, Romania can:

- Facilitate long-term renovation planning through automated tracking of improvements
- Ensure regulatory compliance by linking policy requirements with actual building performance
- Enable financial planning by making funding opportunities directly accessible within the RP framework.

Standardised data fields and interoperability

- **The RP structure must align with the digital building logbook by including:**
  - Energy performance history and projected savings from renovations
  - Renovation steps and cost estimates based on previous and ongoing interventions
  - Material and technical specifications ensuring compliance with national energy standards.
- Ensuring interoperability between RP tools and digital building logbook infrastructure prevents data duplication, increasing efficiency by reducing administrative costs and improving data accuracy.

Automatic updates and monitoring

- The digital building logbook should support continuous updates reflecting renovation progress in staged renovation projects: real-time tracking of renovation progress and performance improvements.
- A version control system should track past interventions and upcoming renovation milestones, ensuring transparency.

Integration of financial and regulatory information

- The digital building logbook should incorporate funding schemes, subsidies and tax incentives, providing direct access to financial resources for building owners.
- Regulatory changes, such as new minimum energy performance standards or fossil fuel phase-out policies, must be automatically reflected in RP recommendations.
- The system should enable automated compliance monitoring, ensuring alignment with national and EU regulations.

Access and user rights management

- Defined user roles should balance transparency and data security:
  - Building owners: View and update renovation progress
  - Energy experts and auditors: Input technical data and validate EPC and RP information
  - Public authorities: Monitor compliance and policy effectiveness
  - Financial institutions: Assess eligibility for renovation-related funding.

3

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