



MultiHome Project

Deliverable No: D5.1 Homeowner-centred MultiHome Service and Consultation Catalogue

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Credits

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Deliverable information

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Welcome to MultiHome!

The main objective of MultiHome project is to establish an integrated home renovation model encompassing strong technical expertise and multi-level cooperation with the market stakeholders to boost and accelerate the Renovation Wave in Plovdiv Region (Bulgaria). The MultiHome project operates a dedicated Service hub and Platform engaging market actors across the entire value chain to support 1 700 dwellings in implementing ambitious, deep renovation actions throughout the project lifetime and beyond.

The MultiHome project envisages interactive and participatory live events for networking and promoting advanced renovation solutions to the building/homeowners, incl. Marketplace brokerage and match-making events, Renovation Champions and Trusted Supplier Roadshows, and others. It proposes a Citizen Renovation Toolbox and “Trusted supplier” label ensuring high quality and professional conduct in enhanced renovation value chains.

The MultiHome project aims to increase the knowledge and capacity of 5 local authorities and 2 regions as well as numerous EU practitioners. In the long-term, the project acts on a 2050 renovation roadmap and policy interception documents to support the future renovation of the residential building stock in the region.

The MultiHome project sets to achieve 30.7 GWh/y primary and 11.8 GWh/y final energy savings, 6 200 t CO₂ savings, total RES generation of 2.1 GWh/y and will trigger 22 mln EUR investments in renovation actions. Over 170 experts will be trained and more than 30,000 people outreached.

No	Beneficiary	Short Name	Country	Logo
1	Energy Agency of Plovdiv	EAP	BG	
2	Municipality of Plovdiv	PLV	BG	
3	Plovdiv Chamber of Commerce and Industry	PCCI	BG	
4	Quadro Synergy LTD	SYN	BG	
5	Union of Homeowners' Associations	CAC	BG	

Contents

Executive Summary	7
1 Introduction	8
2 MultiHome Customer Investigation	9
2.1 Method and design	9
2.2 Survey insights relevant to Catalogue design.....	11
2.3 Lead user workshops insights	14
3 MultiHome Service and Consultation Catalogue.....	16
3.1 Catalogue method	16
3.2 Barrier categorisation	17
3.3 Catalogue goals and objectives.....	19
3.4 Catalogue design.....	19
4 Service entries	26
4.1 Regular and Essential services	26
4.2 Supplementary services	32
4.3 Novel services	35
References.....	41

Figures

Figure 1: Distribution of main user categories	11
Figure 2: Profile of respondents according to building type.....	11
Figure 3: Demand for renovation-related services and consultations.....	12
Figure 4: Willingness to undertake different financial approaches for home renovation	13
Figure 5: Readiness to undertake additional EE and RES measures	13

Tables

Table 1: Summary of barriers for homeowners' associations to renovate their buildings.....	18
Table 2 Summary of service levels in the Catalogue.....	23

List of Abbreviations

Abb.	
3D	Three-dimensional
EE	Energy Efficiency
ESCO	Energy Service Company
HOA	Homeowners' Association
HVAC	Heating, Ventilation, and Air Conditioning
NZEB	Nearly Zero Energy Building
PnP	Plug-and-play
PV	Photo Voltaic
RES	Renewable Energy Sources
SRI	Smart Readiness Indicator

Executive Summary

This report presents the development of the MultiHome Service and Consultation Catalogue, designed as a comprehensive, homeowner-centred guide to the consultation services provided by the MultiHome Service Hub and its renovation professionals. The Catalogue aims to assist homeowners throughout their renovation journey by facilitating energy renovations and streamlining the renovation process. The report highlights findings from an in-depth customer survey and lead user sessions, which identify and validate the primary barriers and needs faced by homeowners during their renovation experiences within previous state-subsidised renovation programmes. The analysis focuses on evaluating the demand for energy renovation consultancies and services, while identifying key trends and barriers affecting their provision and use among single-family and multi-family building owners. The insights gained from the survey form a robust foundation for developing the methodology and design of the Catalogue.

The report outlines the goals and objectives, organisation and structure, as well as the information matrix of the MultiHome Service and Consultation Catalogue. Additionally, it provides a detailed overview of numerous services and consultations included in the Catalogue, which address various stages of the building renovation cycle. These services focus on three key areas of intervention for renovated buildings: insulation of the building envelope, heating and ventilation, and renewable energy sources. The information matrix of the Catalogue encompasses various attributes that help homeowners understand the positioning of the offered renovation services and consultations throughout the renovation journey and value chain. The Catalogue is organised to present essential and supplementary services, along with innovative offerings, to support and guide homeowners in effectively renovating their homes.

1 Introduction

The **MultiHome Service Hub and Platform** aim to facilitate home- and building owners in Plovdiv Region in their renovation journey by providing administrative services and legal advice, technical expertise, social mediation, financial guidance and support, as well as match-making between homeowners, renovation providers, and funding institutions.

The MultiHome Service and Consultation Catalogue is a homeowner-centred extensive and thoroughly structured guide to consultation services delivered by the MultiHome Service Hub and its renovation professionals. The range of services and consultations – administrative, legal, technical, social, and financial, has been primarily developed and validated based on the results of the MultiHome Customer Survey and Lead User sessions. Through their implementation, the barriers and needs of homeowners during their renovation journey within the previous state-subsidised renovation programs were identified. Moreover, the exploration of the homeowners' perceptions and experiences through the survey and sessions deepens the knowledge and understanding about the current market demand for home renovation services and consultations, identifies the main trends in their provision and tries to make future projections for their market realisation.

The goal of the Catalogue is to provide comprehensive guidance and targeted information to individual home- and building owners and their associations (HOAs) regarding the existing opportunities for energy-efficient renovation of their residential buildings. The objectives of the Catalogue are to provide the necessary services to the HOAs and their members concerning all the stages of the renovation journey. The Catalogue structure allows users to navigate easily and understand the offerings through clear categorisation, descriptive labels, unique features, and unified service descriptions. The Catalogue consists of introduction, service categories, service descriptions and appendices with additional information. It contains an extensive number of services and consultations that are interrelated and cover the entire renovation journey as it is currently implemented and envisaged to unfold in future. They cover different stages of the building renovation cycle and three areas of intervention – insulation of building envelope, HVAC refurbishment and/or deployment, RES deployment, and are of five service types – administrative, legal, technical, quality assurance, social, and financial.

The homeowner-centred **MultiHome Service and Consultation Catalogue** is a dynamic system and integrates different elements that may be adapted over time to accommodate the changing needs and expectations of homeowners. This user-centred approach praises itself on its flexibility, responsiveness, and continuous improvement of the service provision. The design delves into the homeowner preferences and requirements through initial survey and user consultation. It is critical to use feedback mechanisms to continuously improve the consultations and services based on user experience. Implementing homeowner-centric renovation services and consultations is a dynamic process that ensures renovation projects are not only completed efficiently, but are also tailored to the changing needs and expectations of homeowners, ultimately leading to higher satisfaction and better long-term value.

2 MultiHome Customer Investigation

2.1 Method and design

The MultiHome project investigates the public perceptions for the building renovation process and the demand for renovation consultancy services in order to draw the customer segmentation and the demand for market services through a targeted customer survey and Lead User sessions. The customer investigation is a crucial process in understanding market dynamics and improving the experiences of homeowners in their renovation journey. By employing a combination of qualitative and quantitative methods, MultiHome project can gain comprehensive insights that inform service development and overall customer engagement.

The main purpose of the customer investigation is to deepen the knowledge about the current market demand for home renovation services and validate the design process of integrated home renovation consultations and services to meet the needs of homeowners. The approach incorporates the following three main activities:

- Preparation and completion of targeted survey by the four main target groups of homeowners reflecting their understanding, expectations and experiences regarding the home renovation process,
- Interviews from the lead users meetings, and
- Storytelling workshops.

The MultiHome Customer Investigation focuses on the user perspective and experience throughout the renovation journey to accommodate the learnings and user demands into the design of the MultiHome Service. In this respect, the MultiHome project has adopted the lead user concept and methodology [1] that suggest innovation often originates from users who face unique and extreme needs that are not adequately addressed by existing products or services. This is well aligned with the notion that the MultiHome Service Hub and Platform offers a novel approach towards integrated home renovation services and is thus emerging on the market and the customer awareness of the demand for it is lower than it actually is.

The 'lead users' actively seek solutions to their problems and often develop innovative solutions themselves, which may eventually become mainstream. The implementation of this methodology by the MultiHome project aims to assess the needs of homeowners in Plovdiv Region relying on the following key aspects of the lead user concept:

- Identifying Lead Users who are individuals that face needs or challenges ahead of the mainstream market. They are often early adopters or enthusiasts who are highly motivated to find solutions.
- Understanding extreme needs because lead users typically have needs or problems that are more extreme or unique than those of the average user. By understanding and addressing these needs, MultiHome Hub and Platform can develop innovative solutions that have broader market potential.

- Collaboration and co-creation as a tool for MultiHome project to collaborate with lead users and co-create innovative solutions by sharing insights, feedback, and resources. Thus, MultiHome Hub and Platform can develop services and consultations that meet the needs of both lead users and the broader market.
- Market segmentation based on the degree of need or innovation provided by focusing on lead users and their needs and thus providing MultiHome Hub and Platform with information on emerging trends and opportunities for innovation.
- Early adoption and diffusion for lead users who often adopt innovations early and play a crucial role in the diffusion of new services. Their positive experiences influence mainstream adoption and help drive the success of innovations.

Within the MultiHome Hub and Platform, the lead user concept emphasises the importance of understanding and collaborating with homeowners who face extreme needs to drive innovation and create renovation services and consultations as part of the homeowner-centred MultiHome Customer Catalogue that aims to meet adequately the needs of the homeowners on the existing market. The lead user approach has been applied through the MultiHome survey and Lead user sessions and co-creation workshops.

The rationale and structure of the **survey** sample and its target groups are based on the need to assess in depth the homeowner profiles, the profile of their multifamily residential buildings, their motivation to participate in the process of home renovation, their involvement during the different stages of the renovation process, investment readiness and expectations. The survey focuses on the barriers that homeowners encounter during their renovation journey. The results are thus intended to provide a solid basis for verifying and tailoring to the needs of the homeowners for the services and consultations offered in the MultiHome catalogue.

The final results and conclusions are based on comparative analysis of the main sections of the questionnaire according to the respondent groups. They include an assessment of the respondents' opinions and motivations, drivers and triggers within the energy renovation process, including attitudes and reluctance towards the home renovation planning, the availability of public subsidies, perception of the comfort levels before and after the renovation, increase in real estate value, financial savings; the results highlight the information needs, and the major financial, technical, organisational and other obstacles.

The survey targets homeowners in four main 'user' categories:

- Early adopters: homeowners interested but hesitant to start the renovation journey,
- Lead users: homeowners who have already gone through the application process to the National Renovation Programme and were/are approved for funding ('past' and 'current' beneficiaries) or are on the reserve list ('reserve list').

These categories cover the entire range of experiences with the renovation process – from the ones who have never gone through the process to the ones who have finished it successfully. Thus, the study ensures the validity of identified barriers to homeowners during their renovation journey.

2.2 Survey insights relevant to Catalogue design

In the survey, 328 responders living in multifamily residential buildings in Plovdiv Municipality provided their feedback on the housing renovation process. The survey respondents adequately represented the four predefined target groups – early adopters 151, current beneficiaries 51, past beneficiaries 86, and applicants on the reserve list 40.

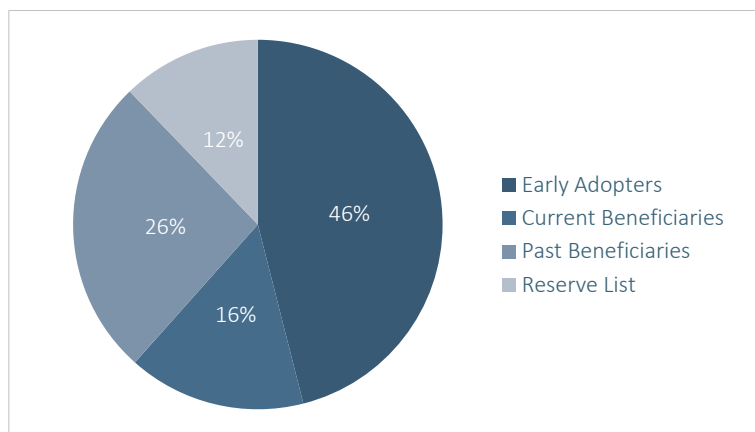


Figure 1: Distribution of main user categories

The survey reports the 25-49 age group as the most active, with this trend particularly pronounced in the respondent group of ‘early adopters’ at 62%. Consequently, economically active citizens are expected to have a decisive role in the upcoming energy renovation.

Another important finding from the survey is that the most active homeowners are those in medium-scale multifamily residential buildings of 5 to 8 stories with one to four block sections.

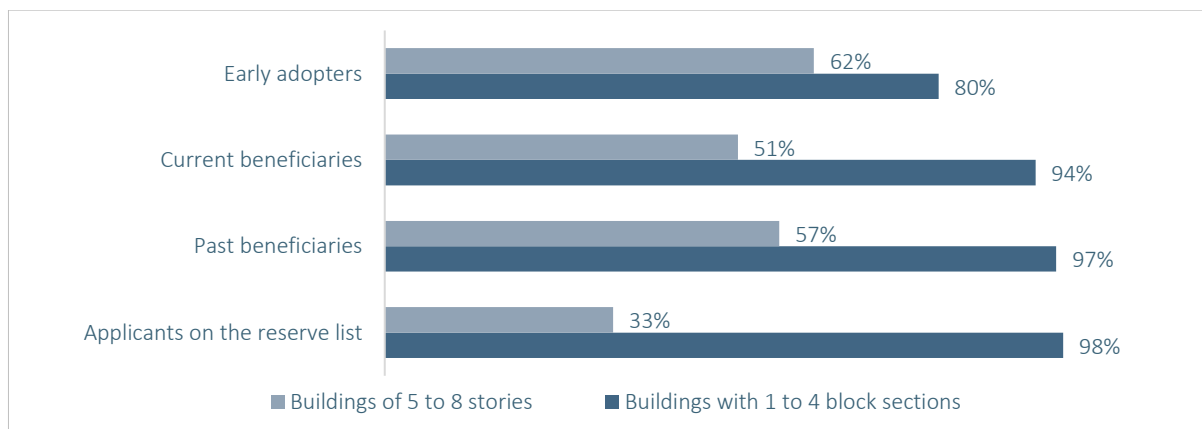


Figure 2: Profile of respondents according to building type

These are the multifamily residential buildings with significant operational and energy efficiency problems. The survey shows that their residents are the most motivated to participate in renovation and therefore represent a promising target group of customers for MultiHome consultancy services. However, as evidenced by the relatively even distribution of building typologies in ‘early adopters’ target group, MultiHome market-oriented consultancy services need to be complementarily shaped and targeted across the entire spectrum of residential buildings to meet interest and needs and to support and deepen market demand.

A key part of the survey for the development of the MultiHome Service and Consultation Catalogue methodology is the respondents' assessment of the need for different types of services that would support them in their renovation journey. There is clearly a leading need for technical services and consultations that cover the whole spectrum of technical knowledge on the energy renovation of residential buildings. This is reported across all respondent groups. At the same time, there is also a significant need for financial services, which for the group of 'early adopters' is of leading importance. This can be explained by the process of decreasing state subsidies for energy renovation of residential buildings and the need for complementary financial instruments, which are of paramount importance for those who are about to undertake the energy renovation of their homes.

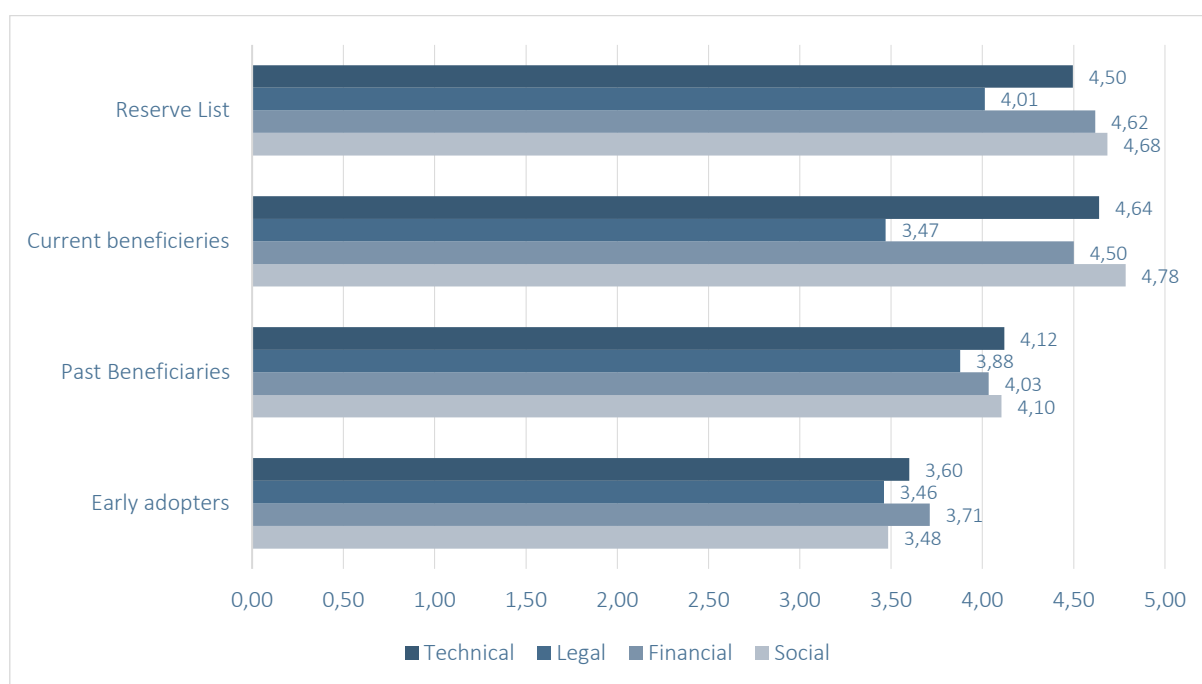


Figure 3: Demand for renovation-related services and consultations

The survey also notes an interest in social services and consultations that target homeowners of different social profiles within the residential building and improve opportunities to overcome barriers to achieve consent to undertake energy renovation. This trend is particularly noticeable for respondent groups who already have experience in applying for the various renovation programmes and are aware of the importance of social barriers to successfully undertake and implement home renovation projects. The survey also shows that for all groups of respondents' legal services and consultations are the least needed.

The survey thoroughly assesses homeowners' need for complementary financial instruments and related financial services. The prolonged period of 100% state subsidies for multifamily housing renovation projects combined with homeowners' reluctance to take on debt to renovate their homes have negatively resulted in a serious reluctance to use various financial instruments. The survey reveals that experienced homeowners would not invest in renovation themselves or would rather use their own savings. However, the survey reveals that in an

environment of already decreasing state subsidies, there is an emerging, although still subtle, trend for early adopters to seek complementary financial instruments and related services.

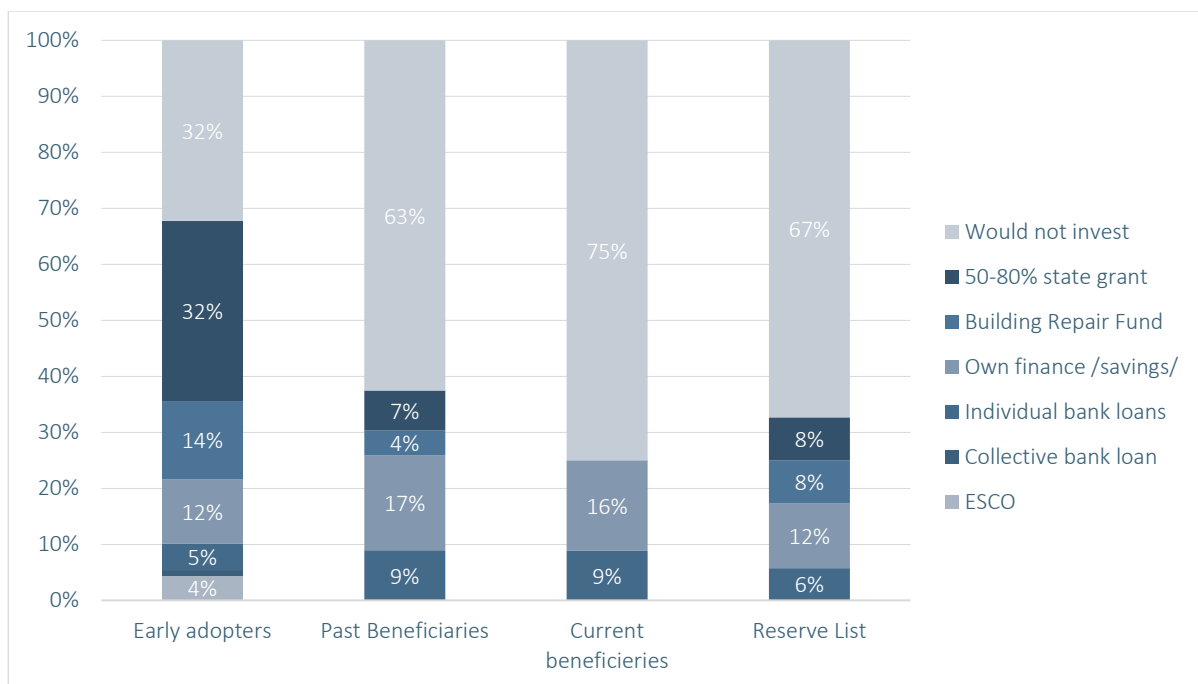


Figure 4: Willingness to undertake different financial approaches for home renovation

In order to develop the methodology and content of MultiHome Service and Consultation Catalogue, the survey focuses on measures to further improve the energy efficiency of residential buildings and the motivation of homeowners to include them in the energy renovation projects under the programme. The survey reveals a positive trend of high motivation across all respondent groups to integrate into the renovation process additional measures such as improvement of the heating installation in the building, replacement of the heating source, and integration of RES in the building. However, this motivation is still associated with the expectations of high state subsidies.

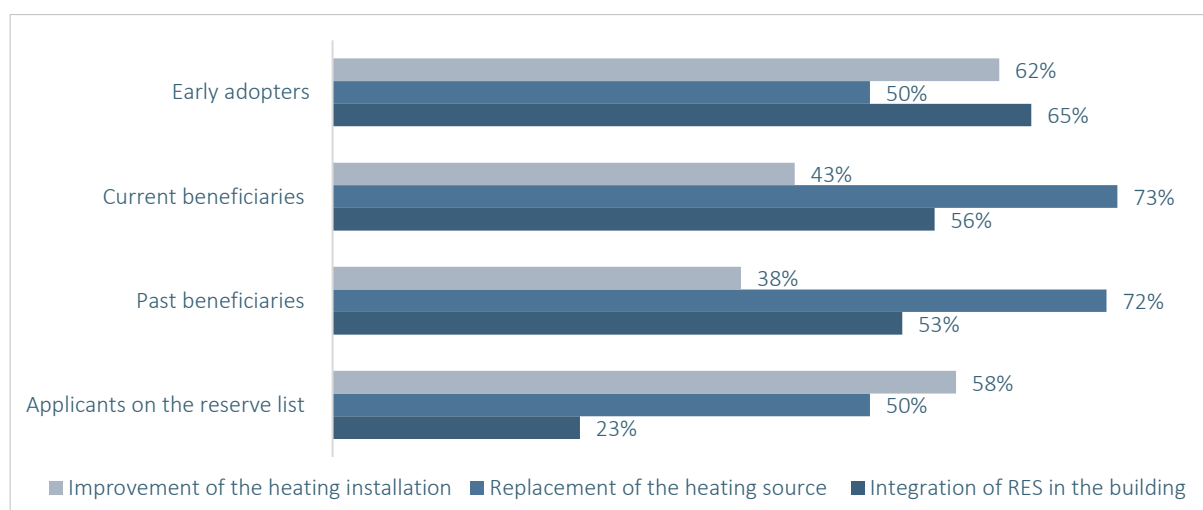


Figure 5: Readiness to undertake additional EE and RES measures

The survey investigates the extent to which homeowners have undertaken energy efficiency measures in their buildings, either individually or jointly with their neighbours. This shows the awareness they have of the need to improve the energy efficiency of their homes and whether they have prior experience of joint action. Although numerous (at ap. 40% for the ‘early adopters’) these types of activities are mainly individual, sporadic and in the absence of the necessary comprehensive technical expertise. This also applies to building management and maintenance as homeowners are not aware of the importance and complexity of this activity and are not willing to pay to a specialised company for the provision of this type of services.

Finally, the survey explores the public perception of innovative forms of associating homeowners in energy communities to reduce energy costs and address the effects of energy poverty. Only respondents from the group of ‘early adopters’ show a relative awareness (ap. 30%) of the possibility of creating an energy community with their neighbours to produce energy for their own use. Across the other three respondent groups, this awareness is almost negligible, yet they claim some, albeit low, motivation for creating energy communities – current beneficiaries 16%, past beneficiaries 8%, and applicants on the reserve list 8%.

2.3 Lead user workshops insights

The three lead user workshops focusing on the renovation of residential buildings in East District, South District and Trakia District of Plovdiv city have highlighted several key findings regarding barriers, motivations, and effective strategies for implementing sustainable renovations. These workshops have brought together stakeholders to discuss the complexities of energy renovations and share best practices. The findings from these workshops underscore the importance of addressing both technical and financial barriers as well as the bureaucratic complexities to facilitate residential building renovations.

The lead user workshops have identified several common barriers that hinder the effective implementation of energy-efficient renovations in residential buildings. These barriers can be categorised into various aspects:

- Policy and administrative barriers

The bureaucratic complexity and hurdles often delay or complicates renovation projects. There is frequently a lack of coordination and synchronisation between national and local authorities, which leads to inefficiencies. Moreover, the administrative burden is enormous and highly dependent on the political situation. Training of the municipal experts is essential to deliver quality administrative service. Experiences may cause biases and prejudice especially the negative ones.

- Economic and financial barriers

Regarding the financial constraints, a significant barrier is the lack of proper financial incentives in addition to existing but decreasing over time state subsidies. Homeowners often resist taking on debt for renovations due to economic uncertainty combined with the illusory presence of

the already diminishing grants. Economic factors such as market distortions can deter investment in energy renovations, making it less attractive for homeowners to undertake such projects. Gaining funding for the renovation project is a success but not everything. The financial security of current renovation programmes is the prerequisite for the high motivation to draw all homeowners in the process. If there is easy access to funding that is “gentle” to the pocket of the homeowners, then they will be motivated to participate. However, the citizens are still reluctant to take up bank loans.

- Social barriers

Many homeowners express a lack of trust towards renovation actors, which can hinder engagement in renovation initiatives. There is a negative attitude towards public funding and donors, even though they provide the finance. In addition, a major issue is the vulnerability of low-income households. Renovating residential buildings with a significant share of vulnerable homeowners poses additional challenges, as these households lack the resources or information needed to pursue energy renovations.

- Communication barriers

The poor dialogue and ineffective communication between stakeholders, including homeowners and energy professionals, can result in misunderstandings and missed opportunities for collaboration. Winning the trust of the community goes through the trust of the building manager(s). This is the front-end of the entire community communication. Another major issue is the lack of Information. Homeowners often lack access to clear advice and information regarding energy renovation options, which inhibits their decision-making process.

- Technical barriers

Renovation efforts often fail to consider an integrated approach that combines various technical solutions effectively, leading to suboptimal outcomes. There is a notable deficiency in technical knowledge among homeowners involved in energy renovations, which can impede project success. Technical consultations are highly needed and forwarding of specific technical inquiries to experts with the right qualification, knowledge and capacity, is of paramount importance. However, homeowners do not have access to experts well qualified in the energy-efficient renovation of their buildings.

The insights from the recent lead user workshop align closely with the customer survey results, highlighting the key challenges. The findings of the in-depth survey and the lead user workshops thoroughly identify the main trends in the provision and use of renovation services during the implementation of the renovation programmes. Thus, it focuses on assessing the demand for energy renovation services and consultations for homeowners in the current quasi-market environment still overwhelmed by public subsidies as well as on identifying emerging trends and opportunities for innovation. In addition, they analyse the satisfaction with the past and ongoing renovation process. The findings of the survey and lead user workshops provide a reliable ground for the elaboration of MultiHome Service and Consultation Catalogue and the proper operation of MultiHome Service Hub and Platform.

3 MultiHome Service and Consultation Catalogue

3.1 Catalogue method

The development of the **MultiHome Service and Consultation Catalogue** requires clear identification of barriers and triggers for the homeowners and their associations in the energy renovation of their single- and/or multifamily residential buildings. The analysis of these is the basis for identifying the key interventions at each phase of the renovation journey that are pivotal for overcoming challenges and enhancing efficiency. The typology of renovation interventions¹ is essential for underpinning the design of necessary services and consultations in the renovation process. The findings of MultiHome Customer Survey validate this process of designing integrated renovation services and consultations that are effectively tailored to meet the needs and expectations of homeowners in Plovdiv Region.

An important tool for uncovering the barriers faced when implementing renovation interventions is to study the renovation workflow from a supply chain perspective by analysing the renovation process and addressing its most important constraints in each phase. The exploration of the building renovation process and its associated barriers can be achieved by examining current practices and the experience of renovation practitioners and professionals. It is essential to specify these barriers and to identify their occurrence at the different phases of the renovation process so that they can be specifically addressed throughout the renovation journey.

The growing importance of energy renovation in single- and multifamily residential buildings has led to many studies and pilot activities in Europe in recent years. Numerous studies have examined the barriers and drivers of energy renovation in multifamily residential buildings. Various research and investment pilot projects funded by the European Commission and national governments in Europe are also working to identify barriers and incentives for homeowners across Europe to undertake energy renovations using the Integrated Home Renovation Services approach [2], [3], [4]. This method considers a holistic approach that brings together different renovation services for apartment owners organised in homeowners' associations.

The MultiHome project explores the general and specific barriers, possible incentives and potential solutions that could empower the home- and building owners and their associations to become crucial actors in the energy renovation value chain using the integrated home renovation services approach. The knowledge on the nature of these barriers is based on a review of existing European academic and investment pilot projects and has been further extended through tailored local research within the MultiHome project using an extensive set of surveys on residents' attitude towards the renovation of multi-family residential buildings.

¹ The phases of the MultiHome renovation journey are fully described in D2.4 MultiHome design concept, cooperation and business model, and implementation pipeline

3.2 Barrier categorisation

The barriers to integrated energy renovation of single – and multifamily residential buildings are classified into four groups based on the literature reviewed and on current and past EU-funded energy renovation projects [5]:

- Financial barriers, including all barriers related to costs,
- Legal barriers associated to policy, laws, and regulations related to energy renovations for HOAs,
- Social barriers related to behavioural patterns, information, and communication,
- Technical barriers to information, technological, and quality assurance.

The existing research papers on the situation in Bulgaria [6] and the results of the MultiHome Customer Investigation reveal that homeowners face several significant barriers when attempting to renovate their dwellings. These barriers originate mainly from a combination of financial, legal, organisational, information and communication bottlenecks:

- Financial barriers

There is a critical funding gap for renovation projects. Compared to the size of dilapidated multifamily housing stock, the available state subsidies are limited and highly insufficient. In addition, many homeowners do not have the necessary funds to co-finance renovation projects. About 60% of the population lives in multifamily buildings where the financial status of owners varies widely, complicating the consent process for investment. Thus, as also revealed in MultiHome Customer Investigation securing homeowners' own funds and requesting co-financing from their neighbours is a major obstacle for homeowners in multifamily residential buildings to participate in renovation projects. The 100% state subsidy² model has jeopardised the entire large-scale renovation process and unreasonably wasted the targeted public funds.

- Legal barriers

The existing laws do not provide sufficient incentives for effective management and maintenance of condominium buildings. This includes a lack of proper regulatory support for energy efficiency initiatives, which hampers the ability of homeowners to carry out necessary renovations. The Condominium Act allows homeowners, but does not oblige them, to form legally registered homeowners' associations, thus complicating the decision-making process. There are no proper and well-working legal mechanisms for mandatory enforcement of the decisions taken by the condominium general assembly.

- Social barriers

There is a longstanding lack of trust and real motivation for energy renovation. The lack of effective communication channels inside the residential and mixed-use buildings and with the wider society and professional communities aggravates the situation. The decision-making

² Further details on the market challenges, incl. financial bottlenecks, in D2.2 Report on strategic positioning and SWOT

process is further complicated by the complexity of social and income profiles of homeowners and thus, it is difficult for them to engage with the renovation process. In addition, the homeowners in multifamily buildings lack effective representation at the national and local level, limiting their influence on policies and public initiatives that could facilitate their renovation efforts.

■ Technical barriers

The information on energy efficiency and renovation of the buildings is partial, insufficient and market biased. The homeowners often receive fragmented and nuanced information regarding energy efficiency and RES measures. There is a need for comprehensive support and guidance tailored to the specific needs of the homeowners throughout the entire renovation journey. The homeowners in multifamily residential buildings lack the necessary expertise to manage renovation projects effectively during the entire renovation process including planning, financing, and executing major renovations.

The review of barriers to energy renovation in multifamily residential buildings at EU level reveals the general trends in the challenges faced, while the MultiHome Customer Investigation provides the specific context and dimensions of the barriers and serves as a reliable basis for a local approach in the development of the **MultiHome Service and Consultation Catalogue**.

Table 1: Summary of barriers for homeowners' associations to renovate their buildings

Category	Barrier
Financial barriers	High-upfront costs
	Difficult collection of funds
	Lack of sufficient public and private funding
	Financial burden for homeowners
Legal barriers	Complex ownership structure
	Limited enforcement of regulations
	Complex and multilevel regulations
	Unregistered HOAs
	Limited municipal administrative resources
	Ineffective Condominium Law
Social barriers	Complex and long lasting collective decision-making
	Lack of awareness and interest
	Homeowners' behaviour with different interests towards renovation
	Lack of transparency and proper communication
	Inequality of income level of homeowners
	Energy poverty cases among homeowners
Technical barriers	Lack of technical know-how
	Lack of consistent and standardised solutions
	Differences between predicted and actual savings
	Complicated subsidy performance-based application procedure
	Lack of technical documentation of buildings to be renovated
	Complicated energy audit regulations

3.3 Catalogue goals and objectives

The **MultiHome Service and Consultation Catalogue** aims to streamline and enhance the energy renovation process for multifamily residential buildings in Plovdiv Region.

The goals of **MultiHome Service and Consultation Catalogue** are to:

- Facilitate energy renovations and simplify the renovation process for homeowners by providing a centralised resource that addresses various aspects of energy efficiency improvements in multifamily residential buildings, and
- Make energy renovation services more accessible to homeowners, ensuring they can easily obtain information, advice, and support throughout the renovation journey.

The objectives of **MultiHome Service and Consultation Catalogue** are to:

- Offer tailored services and consultations on renovation options, including energy-efficient technologies and materials, ensuring that homeowners make informed decisions,
- Coordinate various consultations and services such as administrative, legal, technical, social, and financial advice, as well as project management and quality assurance, thereby reducing the complexity of the renovation process, and
- Highlight the benefits of integrated energy efficiency and RES solutions applied in a single renovation project among homeowners.

By achieving these goals and objectives, the **MultiHome Service Hub and Platform** will not only enhance individual building performance but also contribute significantly to regional and national energy efficiency targets.

3.4 Catalogue design

The **MultiHome Service and Consultation Catalogue** methodology builds on the need to align integrated housing renovation services with identified barriers to housing renovation, assessing the extent to which the services offered by the MultiHome Service Hub and Platform matches the needs identified along the renovation journey and addresses specific barriers. This implies a systematic review of service specifications against the stages of the renovation process and the type of barriers.

The services and consultations to be provided by the **MultiHome Service Hub and Platform** are defined in a few domains:

- Administrative, technical, legal and financial consultations to home- and building owners for building renovation and RES deployment through meetings and a web-based platform,
- Conducting individual and collective consultations for residential building renovation, refurbishment of heating systems and deployment of RES and battery storage technologies,

- Feasibility studies for renovation of residential buildings,
- Simulations of energy consumption and production in residential buildings to reach the highest energy class, including deep renovation, NZEB and Passivhaus standards,
- Financial engineering and development of financial pipelines for building renovation,
- Preparation of funding applications for subsidies, grants and other funding programs,
- Consultations and support for vulnerable customers and energy poor households,
- Facilitation and mediation of the communication with energy service providers,
- Facilitation and mediation of the service provision by trusted providers,
- Quality management and control,
- Communication campaigns for networking with energy service providers.

The Catalogue design builds on the main principles of careful organisation and clear communication to ensure users can easily navigate and understand the offerings through:

- Clear categorisation with clear definition of services,
- Descriptive labels clarifying its specific purpose and how it differs from similar offerings to help homeowners understand the unique value of each service or consultations,
- Highlight on unique features of services or consultations emphasising on what makes each one distinct,
- Unified service descriptions in a standardised format and according to a coherent information matrix to help users compare similar services more easily.

The Catalogue design relies on organising services into distinct categories:

- Energy Assessments – comprehensive assessments of energy use in residential buildings to identify improvement opportunities,
- Renovation Services – detailed information on renovation options, involving building insulation, HVAC refurbishment, and RES deployment,
- Technical Support – assistance with technical design, permitting processes, and contractor selection, and
- Financial Services – information on available funding options, grants, loans, and financial advice tailored to energy renovations,
- Project Management – coordination of renovation projects from start to finish, ensuring timelines and budgets are met.

The **MultiHome Service and Consultation Catalogue** is a structured inventory of services and consultations offered by the **MultiHome Hub and Platform** and collated in dedicated fiches. It serves as a crucial tool for managing service delivery and enhancing user experience. The information fiches present the service attributes that provide clarity and facilitate effective service management. The fiches in the **Catalogue** serve several critical functions:

- Transparency: Provide homeowners with clear insights into available services and their attributes, fostering informed decision-making.
- Efficiency: Streamline the service request process, enabling faster delivery and improved user satisfaction.

- Management Insights: Offer leadership valuable analytics on service performance, helping identify areas for improvement and resource allocation.

The dedicated fiches within the **MultiHome Service and Consultation Catalogue** are essential for the **MultiHome Hub and Platform** with the ultimate aim to optimise the service delivery process and enhance user experience while ensuring efficient management of MultiHome service provision. Each fiche consists of the following main attributes:

- Consultation/Service name
- Areas of intervention
- Service type
- Service level
- Stage in the Renovation journey
- Description
- Targeted customers
- Communication channel
- Market demand
- Relevant renovation packages
- Forwarding of customers
- Contractor type

Consultation name

The consultation name in the Catalogue refers to the specific name of consultation or service offered to the homeowners. Within the Catalogue, an extensive number of consultations and services are identified.

These services clearly stem from the identified interventions, which are aimed at overcoming the main financial, legal, social and technical barriers to sustainable home renovation in Plovdiv Region. Most of them are highly complex and cover various types of interventions that are linked to overcoming different types of barriers in the renovation process. However, it is noticeable that the largest share of services in demand is the technical ones. This is also in line with the conclusions from the MultiHome Customer Investigation - past, present and potential beneficiaries of the National Renovation Programmes prioritised the importance and need for technical advice and support.

The set of services and consultations in the Catalogue plays a crucial role in addressing the barriers to home renovation by fostering collaboration among stakeholders, enhancing knowledge sharing, and streamlining processes. By implementing them, the members of the **MultiHome Service Hub** can jointly address the barriers and challenges to home renovation, ultimately leading to more sustainable and efficient renovation practices.

Areas of intervention

The home renovation is a multifaceted process that encompasses various interventions aimed at improving the quality, sustainability, and liveability of the single- and multifamily residential

buildings. The areas of intervention addressed by the MultiHome service are interconnected to ensure the holistic and integrated nature of the renovation process and aim not only to enhance the physical aspects of residential buildings but also to improve the social fabric ensuring that renovations lead to holistic benefits for homeowners and their associations:

- Complex integrated home renovation addressed at the building envelope with a multidimensional set of financial, legal, social and technical services and advice to improve the energy efficiency of residential buildings and quality of living of homeowners.
- Heating/cooling interventions to improve the energy efficiency of HVAC systems in the residential buildings, replace old heating devices and systems, or fossil-fuel phase out.
- Renewable energy interventions related to the deployment of single or joint RES installations integrated in the residential buildings, incl. the establishment of energy communities.

Service type

The type of service and/or consultation is determined by the area of competence to which the consultation relates. They relate to one of the following areas of competence:

- Administrative
- Legal
- Technical
- Social
- Financial

Most of the services and/or consultations in the MultiHome Catalogue may involve more than one area of competence.

Service level

The fiches in the Catalogue clearly define the relevant service levels. In the context of service management, they categorise the necessity for their provision. The fiches use the following levels:

Regular Service Level

Definition: This is the standard level of service provided to all homeowners. It includes regular services and/or consultations to support the renovation process and meet general customer needs.

Characteristics: consistent and reliable, meets minimum performance standards, often includes routine maintenance and support tasks.

Essential Service Level

Definition: This level of service is critical for conducting the renovation interventions and typically includes essential functionalities that directly influence core MultiHome service provision.

Characteristics: high availability and reliability, prioritised response and resolution times, often tied to specific consultation outcomes or relevant agreements.

Supplementary Service Level

Definition: Supporting services enhance the essential services but are not critical and needed for the immediate results. They provide additional value or convenience for the homeowners, but are not obligatory for the renovation process to happen.

Characteristics: includes supplementary features or services, may involve less urgent response times compared to essential services, aims to improve user experience and satisfaction.

Novel Service Level

Definition: This level involves new or significantly enhanced services and/or consultations that aim to meet emerging market needs of homeowners or capture new markets. It focuses on innovation in service delivery.

Characteristics: introduces unique features or capabilities not previously available, often involves a higher risk but can lead to substantial competitive advantages, requires ongoing evaluation and adaptation based on customer feedback and market trends.

Table 2: Summary of service levels in the Catalogue

Service level	Definition	Characteristics
Regular	Standard service for all homeowners	Reliable, consistent, meets minimum standards
Essential	Critical for the renovation process	High availability, prioritised response
Supplementary	Enhances key/essential services	Supplementary features, less urgent response times
Novel	New or significantly improved services	Unique features, high risk, requires adaptation

The service levels help **MultiHome Hub and Platform** to better structure its service provision in a manner that meets the homeowner expectations and operational needs.

MultiHome Service Hub mode

The Catalogue outlines which part of the MultiHome Service Hub can provide outlined services. This facilitates efficient access and management of those services, ultimately improving customer satisfaction and operational efficiency.

Furthermore, the fiches in the **MultiHome Consultation and Service Catalogue** describe the identified services and consultations according to their demand at the different stages of the renovation journey:

Renovation journey³

Defines the stage of the renovation process the respective service and/or consultation refers to and how it relates to the other ones:

- Information: investigation the homeowners' inquiry and give them general technical and/or financial information as well as to explain them the MultiHome consultation process,
- Facilitation: development of a renovation project by identifying the scope and depth of the energy efficiency and RES interventions defined in the 'renovation case',
- Preparation: preparation of technical and design projects and investment case for a tangible 'renovation project',
- Implementation: acquiring permits and reconciliation documents and delivery of renovation interventions,
- Quality Assurance: providing validation and verification of the results of the renovation projects.

Description

Presents general description highlighting several key elements of the services and/or consultations that provide clarity and guidance to potential customers – type of activities, expected results and benefits.

Targeted customers

Links the services and/or consultations to their specific target customers:

- Individual flats/apartments,
- Single-family houses,
- Multifamily buildings (condominiums),
- Vulnerable customers and energy poor households, and
- Emerging energy communities.

Communication channels

Indicates the communication channels utilised to communicate effectively the services and consultations to the homeowners and ensure that all target customer groups can access and understand the services available to them – online, live, and on-site.

Market demand

Provides assessment of the interest and market demand of the target customer groups for the services and consultations offered – low, medium, high.

³ Full description in D2.3/4 MultiHome design concept, cooperation and business model, and implementation pipeline and D4.1 Report on provision of MultiHome services

Relevant packages

Identifies the pre-defined packages of renovation options to which the consultations and/or services apply:

- **BASIC** package: improvement of the energy characteristics of the surrounding construction elements and building envelope,
- **ADVANCED** package: improvement of the HVAC and DHW systems,
- **PRO/PROFICIENCY** package: RES energy generation and utilisation of RES energy,
- **SUPREME** package: combination of RES actions to ensure their grid independency,
- **NZEB** package: combination of EE and RES interventions that will contribute to reaching NZEB standard,
- **PASSIVHAUS** package: combination of EE and RES interventions that will contribute to reaching Passivhaus standard,
- **PLUS** package: supplementary energy saving measures and actions.

Forwarding of customers

Indicates whether the MultiHome experts need to forward the homeowners to a specialised technical partner in the MultiHome Service Hub for additional support.

Contractor type

Specifies the business profile of the relevant contractors in the Trusted Supplier network to be involved in the renovation activities – renovation/construction, HVAC, and RES providers.

The establishment of the homeowner-centred **MultiHome Service and Consultation Catalogue** is crucial for the effective operation of **MultiHome Service Hub and Platform** and aims to serve as a focal point that simplifies the complex renovation process for the homeowners by providing integrated services, from planning to execution and quality assurance. The homeowner-centred Catalogue allows for one-source information access to the available renovation consultations and services, renovation solutions and technologies, and financial options; moreover, it streamlines them and facilitates tailored solutions that address the individual homeowner needs, incl. technical, social and financial constraints. This does not only build trust of the homeowners but also enhances the overall quality of renovation projects performed and ensures their integrated and holistic nature. The homeowner-centred **MultiHome Service and Consultation Catalogue** is a powerful tool to enhance access to information, streamlines processes, ensures quality, supports vulnerable populations, and facilitates effective communication among stakeholders.

4 Service entries

4.1 Regular and Essential services

Attributes	Service No. 1
Service/Consultation name	Consultations on administrative procedures to start an integrated renovation project
Areas of intervention	All
Service type	Administrative, Legal
Service level	Regular
MultiHome Service Hub mode	Information and Advice, Facilitation and Support
Stage in the renovation journey	Information, Facilitation
Description	Provision of consultancy on the administrative steps and procedures, incl. permitting and reconciliation documents, to the public authorities for stand-alone renovation projects or application under relevant public financing programmes, including the rights and obligations of homeowners.
Targeted customers	Single family buildings/houses, multifamily buildings, energy poor and vulnerable customers, energy communities
Communication channel	Online, live
Market demand	High
Relevant renovation package	Basic, Advanced, Pro, Supreme, NZEB, PASSIVHAUS
Forwarding of customers	No
Contractor type	-

Attributes	Service No. 2
Service/Consultation name	Consultations on and preparation of documents for registering a homeowners' association (HOA) under the Condominium Management Act
Areas of intervention	Renovation
Service type	Administrative, Legal
Service level	Regular
MultiHome Service Hub mode	Information and Advice, Facilitation and Support
Stage in the renovation journey	Information, Facilitation
Description	Provision of consultancy and assistance on preparing the necessary documents and conducting the necessary procedures to register a HOA under the Condominium Management Act.
Targeted customers	Single family buildings/houses, multifamily buildings, energy poor and vulnerable customers, energy communities
Communication channel	Live
Market demand	Medium
Relevant renovation package	Basic, Advanced, Pro, Supreme, NZEB, PASSIVHAUS

Forwarding of customers	No
Contractor type	-

Attributes	Service No. 3
Service/Consultation name	Energy support and advice for vulnerable customers
Areas of intervention	All
Service type	Administrative, Social
Service level	Essential
MultiHome Service Hub mode	Information and Advice, Facilitation and Support
Stage in the renovation journey	Facilitation, Preparation
Description	Provision of consultancy and assistance to low-income households on possible EE and/or RES interventions for their dwelling as well as the availability and affordability of targeted funding instruments for their implementation in order to support low-income households to alleviate energy poverty and include them in the holistic renovation process.
Targeted customers	Vulnerable customers and energy poor households
Communication channel	Live meetings
Market demand	High
Relevant renovation package	Basic, Advanced, Pro, PLUS
Forwarding of customers	Yes
Contractor type	Renovation/construction companies, distributors and installer of HVAC and/or RES technologies

Attributes	Service No. 4
Service/Consultation name	Consultation on and preparation of Technical Building Study
Areas of intervention	Renovation
Service type	Technical
Service level	Essential
MultiHome Service Hub mode	Facilitation and Support
Stage in the renovation journey	Facilitation, Preparation
Description	Provision of consultancy and assistance on 1) the establishment of the actual technical characteristics of the building to be renovated including those related to the requirements under Article 169, paragraphs 1-3 of the Building Code, and 2) the assessment of the actual technical characteristics of the building and their compliance with the normative requirements as well as the implementation of measures for the restoration of the building structure.
Targeted customers	Single family buildings/houses, multifamily buildings
Communication channel	Live, on site
Market demand	High

Relevant renovation package	Basic, Advanced, Pro, Supreme, NZEB, PASSIVHAUS
Forwarding of customers	Yes
Contractor type	Architectural design studio

Attributes	Service No. 5
Service/Consultation name	Consultation on and preparation of an energy audit
Areas of intervention	All
Service type	Technical
Service level	Essential
MultiHome Service Hub mode	Facilitation and Support
Stage in the renovation journey	Facilitation, Preparation, Implementation, Quality Assurance
Description	Provision of consultancy and preparation of detailed study of the energy performance of the building to be renovated based on: 1) on-site survey of the building energy efficiency performance and energy consumption levels by fuel type and costs as well as specific prescriptions on how to reduce it through energy efficiency and RES interventions, 2) formulated pre-defined packages of energy-saving measures with the annual energy savings for each package and the energy class corresponding to the implementation of each package, 3) selected package of energy-saving measures and relevant energy performance certificate, and 4) payback period and environmental impacts of prescribed energy-saving measures.
Targeted customers	Single family buildings/houses, multifamily buildings
Communication channel	Live, on site
Market demand	High
Relevant renovation package	Basic, Advanced, Pro, Supreme, NZEB, PASSIVHAUS, PLUS
Forwarding of customers	Yes
Contractor type	Licensed energy auditor

Attributes	Service No. 6
Service/Consultation name	Technical design project for integrated building renovation
Areas of intervention	Renovation
Service type	Technical
Service level	Essential
MultiHome Service Hub mode	Facilitation and Support
Stage in the renovation journey	Facilitation, Preparation, Implementation, Quality Assurance
Description	Provision of consultancy and assistance on the technical design, including an energy efficiency section prepared based on the energy assessment and the proposed renovation measures with emphasis on reducing airtightness losses and thermal bridging.

Targeted customers	Single family buildings/houses, multifamily buildings
Communication channel	Live, on site
Market demand	High
Relevant renovation package	Basic, Advanced, Pro, Supreme, NZEB, PASSIVHAUS, PLUS
Forwarding of customers	Yes
Contractor type	Architectural design studio

Attributes	Service No. 7
Service/Consultation name	Consultations on measures to improve the energy efficiency of the building envelope
Areas of intervention	Renovation
Service type	Technical
Service level	Essential
MultiHome Service Hub mode	Facilitation and Support, Implementation
Stage in the renovation journey	Facilitation, Preparation, Implementation
Description	Based on the energy assessment and the selected package of energy-saving measures, provision of consultancy and recommendations on 1) the type and thickness of thermal insulation material for the facades, foundations, and roof of the building, and 2) the type of windows and doors and need for their replacement in the individual dwelling or entire building.
Targeted customers	Single family buildings/houses, multifamily buildings, energy poor and vulnerable customers
Communication channel	Online, live, on site
Market demand	High
Relevant renovation package	Basic, Advanced, Pro, Supreme, NZEB
Forwarding of customers	Yes
Contractor type	Renovation/construction companies

Attributes	Service No. 8
Service/Consultation name	Consultation on the replacement of old heating devices or deployment of a new HVAC systems and installations
Areas of intervention	HVAC
Service type	Technical
Service level	Essential
MultiHome Service Hub mode	Facilitation and Support, Implementation
Stage in the renovation journey	Preparation, Implementation
Description	Provision of consultancy and assistance on replacing old, fossil-based heating devices and/or systems with new ones or deployment of new HVAC installations and/or systems that are suitable for the individual dwelling and/or entire building. This is

	done following energy assessment of the dwelling/building parameters and heating and/or cooling volumes.
Targeted customers	Single family buildings/houses, multifamily buildings, energy poor households and vulnerable customers
Communication channel	Online, live, on site
Market demand	High
Relevant renovation package	Advanced, Pro, Supreme, NZEB
Forwarding of customers	Yes
Contractor type	Distributor and installer of HVAC devices, installations or systems

Attributes	Service No. 9
Service/Consultation name	Consultation on the deployment of individual or collective RES installations
Areas of intervention	RES
Service type	Technical
Service level	Essential
MultiHome Service Hub mode	Facilitation and Support, Implementation
Stage in the renovation journey	Facilitation, Preparation, Implementation
Description	Provision of consultancy and assistance on the choice of suitable individual or collective RES installation to be deployed, including consultation on the design and construction of building integrated RES installations from various types – PV, solar-thermal, hybrid PV, geo- and/or hydrothermal, etc. The consultation may include advice on the storage facilities needed.
Targeted customers	Single family buildings/houses, multifamily buildings, energy communities
Communication channel	Online, live, on site
Market demand	Medium
Relevant renovation package	Pro, Supreme, NZEB
Forwarding of customers	Yes
Contractor type	Distributor and Installer of RES facilities

Attributes	Service No. 10
Service/Consultation name	Consultation on the financing options and support for preparation of a financial plan for the implementation of EE and/or RES measures
Areas of intervention	All
Service type	Financial
Service level	Essential
MultiHome Service Hub mode	Information and Advice, Facilitation and Support, Implementation
Stage in the renovation journey	Information, Facilitation

Description	After deciding on the type of EE and/or RES measures, provision of consultancy and assistance to homeowners on: 1) the financial estimate including the stages of study, design, rationalisation and supervision to deliver the renovation project, and 2) the funding options - public programmes, own financing or third-party financial bodies - to ensure cost-effectiveness and transparency throughout the renovation process.
Targeted customers	Single family buildings/houses, multifamily buildings, energy poor households and vulnerable customers, energy communities
Communication channel	Live
Market demand	High
Relevant renovation package	Basic, Advanced, Pro, Supreme, NZEB, PASSIVHAUS, PLUS
Forwarding of customers	Yes
Contractor type	Financial institutions

Attributes	Service No. 11
Service/Consultation name	Preparation of application documents for funding programmes
Areas of intervention	All
Service type	Administrative
Service level	Regular
MultiHome Service Hub mode	Facilitation and Support
Stage in the renovation journey	Information, Facilitation, Preparation
Description	Provision of consultancy and assistance for homeowners in preparing application documents for energy efficiency and RES interventions in their buildings under public or private funding programmes.
Targeted customers	Single family buildings/houses, multifamily buildings, energy poor households and vulnerable customers, energy communities
Communication channel	Live
Market demand	Medium
Relevant renovation package	Basic, Advanced, Pro, Supreme, NZEB, PASSIVHAUS, PLUS
Forwarding of customers	No
Contractor type	-

Attributes	Service No. 12
Service/Consultation name	Project supervision on behalf of the project author
Areas of intervention	All
Service type	Technical
Service level	Essential
MultiHome Service Hub mode	Facilitation and Support, Implementation
Stage in the renovation journey	Implementation, Quality Assurance

Description	Provision of consultancy and assistance on how the designers' team (architect/engineer) ensures that the investment project is carried out accurately during the renovation until the renovated building or new HVAC or RES installation is authorised for use.
Targeted customers	Single family buildings/houses, multifamily buildings, energy communities
Communication channel	Live, on site
Market demand	Medium
Relevant renovation package	Basic, Advanced, Pro, Supreme, NZEB, PASSIHAUS, PLUS
Forwarding of customers	Yes
Contractor type	Quality Assurance manager (architect/engineer)

Attributes	Service No. 13
Service/Consultation name	Independent renovation project supervision
Areas of intervention	All
Service type	Technical
Service level	Essential
MultiHome Service Hub mode	Facilitation and Support, Implementation
Stage in the renovation journey	Implementation, Quality Assurance
Description	Provision of consultancy and assistance on 1) how the supervision by licensed experts of the construction process on the renovation building site is implemented, 2) whether the renovation process at the construction of the site complies with the technical project as well as the quality of the materials used, and 3) the possibility for the construction company, carrying out the renovation activities, to supervise the works through a construction technician assigned to the site in the case of category 5 buildings renovation.
Targeted customers	Single family buildings/houses, multifamily buildings
Communication channel	Live, on site
Market demand	High
Relevant renovation package	Basic, Advanced, Pro, Supreme, NZEB, PASSIVHAUS
Forwarding of customers	Yes
Contractor type	Quality Assurance manager

4.2 Supplementary services

Attributes	Service No. 14
Service/Consultation name	Building budgeting pre- and post-renovation
Areas of intervention	All
Service type	Technical
Service level	Supplementary

MultiHome Service Hub mode	Facilitation and Support
Stage in the renovation journey	Information, Facilitation, Preparation
Description	Provision of consultancy over all building costs before and after the energy efficiency and RES interventions, including maintenance, taxes, energy expenses, etc.
Targeted customers	Single family buildings/houses, multifamily buildings
Communication channel	Live
Market demand	Low
Relevant renovation package	Basic, Advanced, Pro, Supreme, NZEB, PASSIVHAUS, PLUS
Forwarding of customers	No
Contractor type	-

Attributes	Service No. 15
Service/Consultation name	Drone thermal and 3D imaging of a residential building
Areas of intervention	All
Service type	Technical
Service level	Supplementary
MultiHome Service Hub mode	Facilitation and Support, Implementation
Stage in the renovation journey	Facilitation, Preparation
Description	Provision of supplementary energy diagnostics through drone thermal and 3D imaging of a residential building in order to check its energy efficiency: building envelope, windows, and other elements that emit heat, the presence of thermal bridges and the status of HVAC and RES systems.
Targeted customers	Single family buildings/houses, multifamily buildings, energy communities
Communication channel	Live, on site
Market demand	Medium
Relevant renovation package	Basic, Advanced, Pro, Supreme, NZEB, PASSIVHAUS
Forwarding of customers	No
Contractor type	-

Attributes	Service No. 16
Service/Consultation name	Capturing specific building elements with a handheld camera
Areas of intervention	All
Service type	Technical
Service level	Supplementary
MultiHome Service Hub mode	Facilitation and Support, Implementation
Stage in the renovation journey	Facilitation, Preparation
Description	Provision of consultancy and assistance on thermal imaging of specific building elements in order to check the energy efficiency

	of elements that emit heat/cold as well as the existence of thermal bridges and leakages.
Targeted customers	Single family buildings/houses, multifamily buildings, energy communities
Communication channel	Live, on site
Market demand	Medium
Relevant renovation package	Basic, Advanced, Pro, Supreme, NZEB, PASSIVHAUS, PLUS
Forwarding of customers	No
Contractor type	-

Attributes	Service No. 17
Service/Consultation name	Modelling of building energy consumption with software
Areas of intervention	All
Service type	Technical
Service level	Supplementary
MultiHome Service Hub mode	Facilitation and Support, Implementation
Stage in the renovation journey	Facilitation, Preparation
Description	Provision of consultancy over the building energy consumption patterns through modelling with specialised software.
Targeted customers	Single family buildings/houses, multifamily buildings
Communication channel	Live
Market demand	Medium
Relevant renovation package	Basic, Advanced, Pro, Supreme, NZEB, PASSIVHAUS
Forwarding of customers	No
Contractor type	-

Attributes	Service No. 18
Service/Consultation name	Modelling/simulating energy production with software
Areas of intervention	RES
Service type	Technical
Service level	Supplementary
MultiHome Service Hub mode	Information and Advice, Facilitation and Support, Implementation
Stage in the renovation journey	Information, Preparation, Implementation, Quality Assurance
Description	Provision of consultancy over the building energy production patterns through modelling with specialised software.
Targeted customers	Single family buildings/houses, multifamily buildings, energy communities
Communication channel	Live
Market demand	Medium
Relevant renovation package	Pro, Supreme, NZEB, PASSIVHAUS
Forwarding of customers	No
Contractor type	-

4.3 Novel services

Attributes	Service No. 19
Service/Consultation name	Digital Renovation Passport
Areas of intervention	All
Service type	Technical
Service level	Novel
MultiHome Service Hub mode	Facilitation and Support
Stage in the renovation journey	Information, Facilitation, Preparation, Implementation, Quality Assurance
Description	A service for providing a digital, dynamic renovation passport of a single- or a multifamily residential building leveraging a stepped renovation methodology to support renovation decisions. Through the past building data and renovation pipeline, the digital passport provides an analysis of historical data to identify the most cost-effective renovation strategies and predict energy savings.
Targeted customers	Single family buildings/houses, multifamily buildings
Communication channel	Online, Live
Market demand	Low
Relevant renovation package	Basic, Advanced, Pro, Supreme, NZEB, PASSIVHAUS, PLUS
Forwarding of customers	No
Contractor type	-

Attributes	Service No. 20
Service/Consultation name	Building Renovation Pipeline
Areas of intervention	All
Service type	Technical
Service level	Novel
MultiHome Service Hub mode	Facilitation and Support
Stage in the renovation journey	Preparation
Description	Provision of consultancy and assistance on a structured pipeline of actions to effectively implement energy efficiency and RES interventions in a building with understanding of current frameworks, technologies, and approaches that can be deployed to achieve significant improvements in the building energy performance.
Targeted customers	Single family buildings/houses, multifamily buildings
Communication channel	Live
Market demand	Low
Relevant renovation package	Basic, Advanced, Pro, Supreme, NZEB, PASSIVHAUS
Forwarding of customers	No
Contractor type	-

Attributes	Service No. 21
Service/Consultation name	Renovation Financing Hub
Areas of intervention	All
Service type	Technical
Service level	Novel
MultiHome Service Hub mode	Facilitation and Support
Stage in the renovation journey	Information, Facilitation
Description	The Renovation Financing Hub is a digital tool for all homeowners that aggregates neighbouring buildings or buildings of similar typology and calculates financial indicators to assist both homeowners and financial institutions in finding match funding for renovation projects.
Targeted customers	Single family buildings/houses, multifamily buildings, energy poor households and vulnerable customers, energy communities
Communication channel	Online, Live
Market demand	Low
Relevant renovation package	Basic, Advanced, Pro, Supreme, NZEB, PASSIVHAUS, PLUS
Forwarding of customers	No
Contractor type	-

Attributes	Service No. 22
Service/Consultation name	Renovation Project Bundling
Areas of intervention	All
Service type	Technical, Financial
Service level	Novel
MultiHome Service Hub mode	Facilitation and Support
Stage in the renovation journey	Facilitation, Preparation
Description	Provision of consultancy and assistance on renovation project bundling as a strategic approach that combines multiple building renovation projects into a single contract in order to enhance efficiency, reduce costs and streamline project delivery by costs effectiveness, fast delivery, simplified project management, increased funding opportunities and enhanced quality control.
Targeted customers	Single family buildings/houses, multifamily buildings
Communication channel	Live
Market demand	Low
Relevant renovation package	Basic, Advanced, Pro, Supreme, NZEB, PASSIVHAUS, PLUS
Forwarding of customers	No
Contractor type	-

Attributes	Service No. 23
Service/Consultation name	Smart readiness building assessment (SRI)
Areas of intervention	All
Service type	Technical
Service level	Novel
MultiHome Service Hub mode	Facilitation and Support
Stage in the renovation journey	Facilitation, Preparation
Description	Provision of consultancy and assistance to assess the smart readiness of residential buildings in order to evaluate their smart capabilities particularly in relation to energy efficiency and occupant comfort. It aims to promote the integration of smart technologies in buildings, which are essential for achieving decarbonisation goals and enhancing living environments.
Targeted customers	Single family buildings/houses, multifamily buildings
Communication channel	Live, on site
Market demand	Low
Relevant renovation package	Basic
Forwarding of customers	No
Contractor type	-

Attributes	Service No. 24
Service/Consultation name	Renovation Journey Tracker
Areas of intervention	All
Service type	Administrative, Legal, Technical, Quality Assurance, Social, Financial
Service level	Novel
MultiHome Service Hub mode	Facilitation and Support
Stage in the renovation journey	Information, Facilitation, Preparation, Implementation, Quality Assurance
Description	Provision of integrated digital hub for a single renovation project to streamline the renovation process within a single building level by providing access to information and support for homeowners, facilitating energy-efficient renovation and addressing barriers that often hinder individual project.
Targeted customers	Single family buildings/houses, multifamily buildings
Communication channel	Live
Market demand	Medium
Relevant renovation package	Basic, Advanced, Pro, Supreme, NZEB, PASSIVHAUS, PLUS
Forwarding of customers	No
Contractor type	-

Attributes	Service No. 25
Service/Consultation name	Smart home integration
Areas of intervention	HVAC, RES
Service type	Technical
Service level	Novel
MultiHome Service Hub mode	Facilitation and Support, Implementation
Stage in the renovation journey	Preparation, Implementation
Description	Consultations and assessment for the level of integration of smart home technologies that can enhance the energy efficiency of the buildings or individual dwellings by providing solutions for automated energy management systems, smart thermostats, and energy monitoring devices.
Targeted customers	Single family buildings/houses, multifamily buildings
Communication channel	Online, live, on-site
Market demand	Low
Relevant renovation package	PLUS
Forwarding of customers	Yes
Contractor type	Specialised smart metering providers

Attributes	Service No. 26
Service/Consultation name	Solar-ready renovation
Areas of intervention	RES
Service type	Technical
Service level	Novel
MultiHome Service Hub mode	Facilitation and Support, Implementation
Stage in the renovation journey	Facilitation, Preparation, Implementation
Description	Consultation on the possibility of renovating a residential building at basic levels and at the same time planning the integration of RES technologies at a later stage.
Targeted customers	Single family buildings/houses, multifamily buildings
Communication channel	live, on-site
Market demand	Low
Relevant renovation package	Pro, Supreme, NZEB, PASSIVHAUS
Forwarding of customers	Yes
Contractor type	Distributors and installers of RES technologies

Attributes	Service No. 27
Service/Consultation name	Plug-and-play technologies
Areas of intervention	RES
Service type	Technical
Service level	Novel
MultiHome Service Hub mode	Facilitation and Support, Implementation

Stage in the renovation journey	Facilitation, Preparation, Implementation
Description	Provision of consultancy on Plug-and-play (PnP) RES technologies that refer to systems designed for easy integration and operation without extensive configuration or technical expertise.
Targeted customers	Single family buildings/houses, multifamily buildings
Communication channel	Live, on-site
Market demand	Low
Relevant renovation package	Pro, Supreme, NZEB, PASSIVHAUS
Forwarding of customers	Yes
Contractor type	Distributors and installers of RES technologies

Attributes	Service No. 28
Service/Consultation name	Tailored financial solutions
Areas of intervention	All
Service type	Legal, Financial, Technical
Service level	Novel
MultiHome Service Hub mode	Facilitation and Support
Stage in the renovation journey	Facilitation, Preparation, Implementation
Description	Provision of consultancy on tailored financial solutions including ESCO schemes that enable homeowners to undertake home renovations for improving the energy efficiency while minimising financial risk, maximising potential savings and reducing the upfront financial burden. They enable homeowners to implement home renovation with minimal initial investment. The benefits for homeowners are: 1) cost savings by improving energy efficiency and reducing utility bills, 2) risk mitigation by allowing homeowners to modernise their buildings without incurring upfront costs or financial risks associated with traditional renovation methods, and 3) support for homeowners through the expertise of ESCO in managing energy projects, ensuring that renovations are executed effectively and efficiently.
Targeted customers	Multifamily buildings
Communication channel	Live, on-site
Market demand	Low
Relevant renovation package	Basic, Advanced, Pro, Supreme, NZEB, PASSIVHAUS
Forwarding of customers	No
Contractor type	-

Attributes	Service No. 29
Service/Consultation name	Post-renovation evaluation and monitoring
Areas of intervention	All
Service type	Technical
Service level	Novel
MultiHome Service Hub mode	Facilitation and Support
Stage in the renovation journey	Quality Assurance
Description	Provision of ongoing monitoring of energy performance post-renovation that helps homeowners understand the impact of their investments and ensure that systems are functioning optimally.
Targeted customers	Single family buildings/houses, multifamily buildings
Communication channel	Online, live, on-site
Market demand	Low
Relevant renovation package	Basic, Advanced, Pro, Supreme, NZEB, PASSIVHAUS, PLUS
Forwarding of customers	No
Contractor type	-

Attributes	Service No. 30
Service/Consultation name	Support for energy communities
Areas of intervention	RES
Service type	Administrative, Legal
Service level	Novel
MultiHome Service Hub mode	Information and Advice, Facilitation and Support
Stage in the renovation journey	Information, Facilitation, Preparation, Implementation
Description	Provision of advice and support for establishing energy communities as collective, non-profit entities that empower homeowners to produce, manage, and consume renewable energy.
Targeted customers	Single family buildings/houses, multifamily buildings, energy communities
Communication channel	Live, on-site
Market demand	Medium
Relevant renovation package	Pro, Supreme, NZEB, PASSIVHAUS
Forwarding of customers	Yes
Contractor type	Distributors and installers of RES technologies

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