



D2.1. Research on homeowners' motivations, drivers and obstacles

RenoHUB H2020 project

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PROJECT PARTNERS

AACM: AACM Central Europe LLC

ENERGIAKLUB: Energiaklub Climate Policy Institute and Applied Communications Association

IMRO: IMRO-DDKK Non-profit Ltd

MCSTE: Hungarian Family House Owner Organization

MEHI: Hungarian Institute for Energy Efficiency

1. EXECUTIVE SUMMARY

Energy efficiency improvement projects are seen as part of ‘home renovation’: even though they are the most important (due to the magnitude of the investment and the immediate improvement in comfort levels), **they cannot be treated independently**, disconnected from the other renovation jobs that also take place. Therefore consumer needs in case of renovation projects are much wider than the offer of the One-Stop-Shop concept.

People who renovate their homes are primarily motivated by **advantages that offer immediate returns** (in terms of comfort, aesthetics, reduced energy bills, long-term peace of mind). Therefore, the ‘theoretical’ aspects of energy efficiency (being „green” etc.) do not yet affect people’s decisions, which means that **communication should focus on the instant practical benefits of energy improvement**.

People typically renovate all three target areas of their homes (insulation, modernization of doors and windows and the heating system), though they sometimes do this in stages: they expect **the combination of these projects** to result in relevant, immediate and a long-term return on their investment. There are financial reasons behind intermittent renovation projects which suggests that **there is a huge need for information on available tenders and financial support opportunities**.

The most important **challenges** and **difficulties** associated with renovation projects are coming from its complex and multi-layered characteristics. There is a huge need for a accessing all the information required before and during the renovation process on one platform in a simple, transparent way. The promise of a more simple and clear project-management is essential in communication.

The target group, those who have planning to renovate and those who have already done so, covers the whole Hungarian population – and everybody seeks **tailored solutions**. The target group should be approached from the following segmentation factors:

- The special characteristics and needs resulting from the **type of property** to be renovated (the type of property, its usage patterns)
- **Demographic considerations** (settlement size, age and internet-savviness, and financial situation)
- The area to be renovated, the **type of renovation** and its complexity
- **Renovation experience**, the amount of support they demand

These complex segmentation aspects suggest the **diverse need of information** of different consumers, therefore the One-Stop-Shop website need to be clear and need to **orientate consumers quickly** based on multi-layered searching and screening.

The survey ran before and at the beginning of the COVID 19 epidemic. In light of the probable economic recession after the epidemic the financial factors are expected to become more important in addition to contractor supply and demand changes.

2. BACKGROUND OF THE DELIVERABLE

2.1 Objectives of the RenoHUb project

The energy demand of the residential sector accounts for approximately one-third of the final energy consumption in Hungary. The domestic residential building stock has an enormous potential for energy savings. Based on recent estimates, approximately two-thirds of the 4.4 million homes are energetically outdated, and with appropriate energy renovation approximately 40 to 50 percent of the final energy currently used could be globally saved. Besides the reduction of energy overhead, deep energy renovation of residential buildings is also a means to increase the real estate value. At the same time, energy refurbishment at large scale can significantly contribute to meeting the national climate and energy policy targets. According to estimations by experts, approximately 80–100 thousand apartments would need to be refurbished each year in order to prevent further aging of the building stock, whilst actual yearly renovation rate is far lower.

RenoHUb aims to trigger a significant upscale of the energy retrofits of the Hungarian residential building-stock. The project is based on the assumption, that the rate of the energy renovation of homes can be significantly increased by eliminating the technical, financial and legal barriers of the process and providing adequate technical support to the homeowners. The key project outcome will be the implementation of a Renovation Hub (RenoHUb) model that is based on a “one-stop-shop” scheme, aiming to support the energy renovation of the Hungarian residential building stock. The “one-stop-shop” model is proved to be powerful instrument to accelerate home retrofits, and it successfully works in several European countries. RenoHUb will consist of an Online Platform and network of information offices (called Information Hotspots). RenoHUb services will be able to seamlessly cover the entire spectrum of energy renovation process for both the multi-apartment and single-family buildings.

2.2 Objectives of Task 2.1

The purpose of the Task is to understand in depth what are the drivers/triggers and obstacles for homeowners to renovate their buildings (such as saving on the energy bill, climate awareness, increase of the value of the real estate versus the complexity of the process, limited access to information, lack of time, trust, expertise, etc.). However, on the understanding that homeowners living in multi-apartment buildings and in single family houses have distinctly different decision-making procedures, motivations and recognition of personal interests (e.g. collective vs. individual decision-making, cost saving vs. higher comfort, explicit target of energy efficiency refurbishment vs. energy efficiency refurbishment being a part of a more comprehensive renovation package, more flexibility by single family owners in phasing of renovation activities), these two main building groups will be analysed, separately. As the decision-making process for multi-apartment buildings has been substantially more explored by previous projects particular attention is given to single family houses under this Task.

Mapping of the personal decision-making process to invest own resources or to use external financing is part of the assessment. It is of particular interest to understand what are the personal motivations that lead to a decision to involve external (non-subsidy) financing for the home renovation, and how this process can be facilitated in specific ways such as provision of targeted information, consultation, simplification of the application procedures, etc. and ultimately how the one-stop-shop of RenoHUB can incorporate a financing module.

From methodological point of view the Task anticipates focus groups research and parallel in-depth interviews with key stakeholders. The focus group interviews were conducted by market research company Kantar Hoffmann Kft. (the “Consultant”), which was selected for this assignment as a result of requesting a technical and financial proposal from three reputable market research companies. The in-depth interviews were carried out by the consortium partners.

3. RESEARCH AIMS AND METHODOLOGY IN A NUTSHELL

The research aims of Task 2.1 and therefore the deliverables of the Consultant were, in particular:

- To assess the motivation, drivers and triggers as well as barriers of energy retrofits (attitudes and reluctance of those planning home renovation e.g. pressure to energy renovation, public subsidies, increase in comfort level, increase in real estate value, financial saving, their information needs, as well as the major financial, technical and other obstacles);
- To understand the opinion of the participants of the research about the two key elements of the One-Stop-Shop model developed: the Information Hotspots and the Online Platform (e.g. for what purposes to use? how the system will be credible, price of the service the users are willing to afford? required communication language, optimal creation of the offices);
- To explore what types of information are required by the participants of the home renovation process.

The aim of the in-depth interviews were: to map and understand the interests and specific aspects of the relevant stakeholders (having role in the renovation process or being a potential partner in RenoHUB project) in the above questions.

Consultant fulfilled its services in 2 phases, extended by the RenoHUB partners:

Phase 1: Exploration of drivers and triggers of residential energy efficiency investments (online blog); deadline: 11th March, 2020;

Phase 2: Assessment and development of One-Stop-Shop concept (focus groups); deadline: 14th April, 2020.

Phase 3 (by RenoHUB partners): In-depth interviews with renovation stakeholders: contractors, producers, common condominium representatives and local municipalities.

In addition to the above, the survey needs to explore the language of communication that is to be used as well as outlining the model in light of the above goals and tasks: what vision should be communicated in order to become motivating, what information should be shared through the online platform and what support future customers would require in general.

The surveys were conducted before (online platform) and during (focus group interviews, in-depth interviews) the COVID-19 pandemic. Given the likely economic recession after the epidemic, financial factors are expected to play an even bigger role.

Research background

- mapping attitudes of potential customers
- concept testing a one-stop-shop system to support energy efficiency improvement projects, exploring the needs of the target group

Methodology

- online blog to gauge needs and explore experiences about renovation projects (20 persons, respondents from the capital and countryside)
- online focus group discussion for testing the concept (4x6 persons, people living in condos / detached houses in Budapest, after and before renovation projects)
- more than 10 in-depth interviews with stakeholders in residential energy renovation

3.1 Online blog phase

On-line blog: a continuously moderated, 3-day discussion using a diary technique

Aim: mapping motivations behind energy efficiency

Sample: 20 respondents / blog

Sex: mixed

Age: between 30–56 yrs

Place of living:

- 14 persons from Budapest and the surrounding areas
- 6 persons from other major cities and their surrounding areas

Family status: mixed (singles, couples without kids, couples with kids and empty nesters)

Type of home improvement project: the three types mixed (minimum 5 persons / type)

- **They have conducted home renovation projects within the last 5 years comprising the following** (door and window replacement, insulation, heating modernization) **within the provided budget brackets** (in the case of detached houses: 2-12 million HUF / house, in the case of condominium apartments : 0.5-3 million HUF / apartment), they participated in the project as **decision-makers**
- They are the **owners** of the renovated property and maximum 5 persons rent out their property

3.2 Focus group phase

Aim: evaluation and improvement of the one-stop-shop concept by 4 online focus group discussions

Target group: 6 respondents / group

Place of living: People who live in Budapest and in the surrounding areas

Duration of discussion: 120 minutes / group

Sex: mixed (decision-makers)

Age: between 30–60 yrs

Family status: mixed, childless couple, couple with kids and empty nester

Type of home improvement project: the three types mixed (insulation, doors and windows and heating modernization)

- Renovated these aspects of their homes in the last 5 years within the provided budget brackets
- Planning to renovate (**1-2 persons have purchased their property recently**)

Group composition:

- 1) lives in a condo, they are planning some energy efficiency improvement project, empty nesters or over 50
- 2) lives in a condo, have already finished the renovation project, 30–50 years old
- 3) lives in a detached house and they are planning some energy efficiency improvement project, 30–50 years old
- 4) lives in a detached house, they have already finished the renovation project, empty nesters or people over 50

3.3 In-depth interview phase

14 interviews were done by the RenoHUb partners between February and May 2020:

5 contractor (self-employed or company):

1. General contractor company (countryside), working mainly with multifamily apartments and some detached family houses
2. General contractor company (countryside, local municipality-owned), large
3. General contractor originally in single-family segment, shifted to company projects, 1–2 large family house projects per year
4. Water, gas and heating system technician (self-employed) with 40 years of experience in detached family houses, one third of the works are related to complex energy renovation
5. Self-employed contractor in insulation segment for 20 years, in the last year more family houses (about a dozen/year) due to the 0% loan, they implemented complex renovations

4 manufacturer companies:

1. 4 employees of the market leader domestic furnace manufacturer in Hungary, in touch with residents through agents, sometimes in direct contact
2. manufacturer of insulating products, staff member responsible for traditional building materials, serving TÜZÉP sites and residential need, directly contacted with residential investors
3. a market leader company in building engineering, most of which is residential renovation, but mainly deals with large building engineering systems and condensing boilers
4. Market leader premium building engineering company

2 common representatives:

1. City of 20,000 people in western Hungary, they apply for renovation grants every few years
2. City of 10,000 people in Somogy county, they apply every year for renovation grants

3 local municipalities:

1. A city with county status of 50,000 people
2. A city with county status of more than 100,000 people
3. A district of Budapest

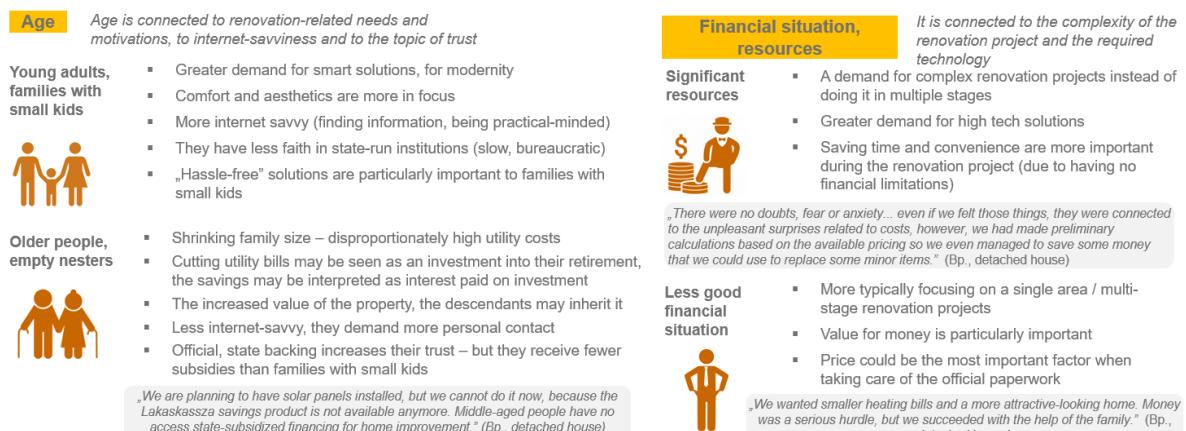
4. RESULTS

4.1 Results of the online blog and the focus group interviews

Since both two research projects aimed for the renovators' attitudes and the acceptance of the RenoHUb concept, the results are aggregated thematically below.

4.1.1 Segmentation of renovators

Renovators can be divided into groups with similar needs, problems and fears based on numerous aspects. The most important segmentation viewpoints and their characteristics are shown in the figures below.



The **main difference** is, along which the research itself was also divided, between those **living in family houses** and those who has a **flat in a condominium**. Along this the service itself will be also split up both on the online platform and in the offices. In the case of condominiums, it is important to point out that not necessarily the residents, but mainly the common condominium representatives will be the target of our services.

Size of settlement		Type of property	Active property use
Small township	<p>It is primarily important from the point of view of needs related to contractors and the channel of communication</p> <ul style="list-style-type: none"> More personal connections – barter agreements Local things work better because of the personal connection, more trust → they demand less support from the contractor Local communication sources, often based on personal connections 	<p>It is connected to the areas that are to be renovated, the energy efficiency improvement possibilities and the decision-making process</p> <p>Detached house</p> <ul style="list-style-type: none"> More complex renovation needs – more possibilities (e.g. renewable energy also an option) → more resource-intensive Demands greater savings Multi-stage execution may lead to a drawn-out renovation project DIY projects more typical Individual decisions, more freedom – but special needs, e.g. if the property is facing the street 	<p>It is connected to the complexity of the renovation project and to time considerations</p> <p>Recently purchased property that needs renovation</p> <ul style="list-style-type: none"> More motivated to renovate (they set aside funding when making the purchase; it is more convenient to renovate before you move in) Aesthetics are of primary importance Less urgent <p><i>„If we had purchased a fully renovated apartment, we would have had to pay twice as much at the least. We did not have enough money for that, but the process was therapeutic at least.“ (condo, countryside)</i></p>
Large city	<ul style="list-style-type: none"> They might be more lost – they demand more help primarily when selecting contractors Information sources are less based on personal connections (e.g. online channels) 	<p>Condo</p> <ul style="list-style-type: none"> Simpler needs, e.g. in the case of housing-estate flats, more limited energy efficiency renovation options More limitations / potential obligations – community decisions / difficult neighbors make decisions difficult Special needs related to the position of the apartment (e.g. top floor vs. ground floor, apartment is surrounded by other flats or at the edge of the building, facing the inner courtyard or the street) 	<p>The property to be renovated is the home they live in</p> <ul style="list-style-type: none"> Harder to get started, to expose yourself to the inconveniences of the renovation More problem-driven (e.g. sense of danger, noticeable insulation problems, increasingly high utility bills) <p><i>„My most important experience is that you should move out of the apartment temporarily before you start the renovation if possible. It makes things not only more convenient but also faster.“ (Bp., condo)</i></p>

The **age of the renovators** and **size of the settlement** determine not only the availability of the service, but also the way (personal or online) and the style of communication itself. By the access of services, their dependence on each other and the development of the online platform – allowing as many options as possible – we have to consider the fact that someone takes willingly over the whole renovation project, including even parts of the construction, or would rather pass even the decisions to someone else.

Renovation experience	Personal expertise	Concrete renovation job
<p>Affected by age, area-specific, also affects the need for information and support</p> <p>Previous renovation experience</p> <ul style="list-style-type: none"> Greater background knowledge, both at the theoretical and practical levels, more self-confidence Greater independence Awareness of the pitfalls → the fears are still there 	<p>Connected to renovation experience and personal expertise</p> <p>Participation in the renovation work</p> <ul style="list-style-type: none"> They like DIY and enjoy putting in the work, also motivated by financial constraints → they require technical help Being in full control of the process makes them feel creative Nevertheless, DIY only works in specific areas due to the expert knowledge required for energy efficiency improvement projects 	<p>The various types of jobs require different types of expertise and templates to follow</p> <p>Insulation</p> <ul style="list-style-type: none"> The easiest task to do yourself Significant aesthetic motivations <p>Window replacement</p> <ul style="list-style-type: none"> Significant aesthetic motivations Frequent constraints (e.g. in the case of condos) <p>Heating modernization</p> <ul style="list-style-type: none"> Aesthetic considerations are less important Complicated technology, demands expertise, not suitable for DIY projects 
<p>No previous renovation experience</p> <ul style="list-style-type: none"> More generic and vague fears resulting from the absence of first-hand experience Increased demand for support 	<p>No personal DIY experience</p> <ul style="list-style-type: none"> The renovation puts greater psychological strain on them, so they let a contractor deal with it Managing the renovation is problematic (who can they trust, what is good value when it comes to labor costs and material costs etc.) 	

In the following subsections we sum up the responses received to our key questions during the online blog and focus group interviews.

4.1.2 Motivations

The most important motivation for renovation are **aesthetics**, increasing comfort levels and (energy/cost) savings. Painting, relocating walls, and possibly a new window will help renovators have a “beautiful,” “bright,” “cultured” home instead of “drafty and ugly,” “accident-prone”. For many people, that’s the most important thing – and even more relevant than their investment’s payback. Increasing the **level of comfort** is another important advantage of energy efficiency renovations , which can help with problems such as “the windows are not closing well”, “the walls are not insulating well”, “we are cold by the wall”. **Saving money** also go hand in hand with energy efficiency, and helps to ensure that the investment is recoverable in the long term, or at least, up to a month after

renovations to have a lower household overheads to be paid. This can provide a short-term, visible result for most energy renovations.

Additional motivations were **greater control** (reliable, more controllable, economical heating system), **safety**, which also applied to burglary (safety shutter fitting), and carbon monoxide safety. Another important aspect is **health**: where the windows were constantly dampened, moldy, the ledge is swollen, there a well-designed and executed renovation that ensures the vanish of mold and dehumidification which can bring great relief to the residents.

Finally, a common, but unfortunately steadily decreasing reason for renovations, is using **disposable financial products** at hand. This means mostly the expiration of building savings accounts, but more rarely also inheritance or appearance of an actual grant application.

4.1.3 Fears

One of the most common fears about more complex renovations is that there is a tremendous amount of **hassle**, from ranging phone calls to meetings, from waiting to cleaning up renovation areas. "It was horrible, it took years of my life, now I'm there to give it all up," one participant summed up. The **management** of many small decisions, the stress, numerous resignations give the families difficult times. If they are not surrounded by the right professionals and contractors, the process can often become chaotic and renovators can often feel that they have lost **control**.

Closely related to this is the issue of **predictability**: how long time this and that will take, how much will it cost? Will the money be enough? Will the specialist really come? Unfortunately, often no one can give a reassuring answer to these at the beginning of the process.

Predictability in the case of **finance** is one of the most critical issues, and the big question here is not only whether it will be enough, but also whether the renovator has managed to find the best value for money technical solution and a reliable professional who will really provide quality for the renovator's money. The question is, where a really reliable professional can be found? This causes also a great fear, and unfortunately renovators who often turn to their neighbours, friends and relatives for contact and information, make the same mistake as those who recommended the contractor.

An important question is **trust**: who do the renovators believe, who gives good advice? The neighbour, the contractor, the energetic, maybe other professionals? Who give information, does really have the proper and actual answer? Do the contractors offer a realistic price? Answering these questions is also hampered by a general lack of **information**: renovators are laymen who are often unable to answer contractors' questions, so they would be very grateful for reliable, understandable information and for decision support.

4.2 In-depth interviews with contractors, manufacturers, joint representatives

4.2.1 Motivations, satisfaction

The contractors basically confirmed the results of the public research: they see that the main **motivations of the residents** are cost reduction, replacing outdated equipments, replacing elements or units to more efficient ones. In addition, aesthetics (if the rest of the apartment is already being renovated, this or that should be also nicely done), the available subsidies or expired building savings accounts can also have an impact, as well as equipment failures, operational safety and comfort problems. In the case of condominiums, in their experience, energy modernization is the overall goal.

Common representatives or residents who seek them to urge intervention are usually dissatisfied with the condition of the building (crumbling, old windows, unpretentious building exterior), so aesthetics also play an important role.

The experience of manufacturers is that their products are often replaced only if they have been permanently out of order, cannot be repaired any more. However, of course, in addition to that, energy savings, and the return on investment is also important: energy efficiency is a goal in 50–60% of heating modernization projects.

We asked the producers and contractors if they usually motivate the residents towards energy efficiency renovations, and if so, how they formulate their messages. According to their answer, almost everyone is actively trying their best to reach higher technical content and to help gaining greater energy savings. **To motivate residents** to do so, they emphasize savings, additional property value, reduced bills, security, and higher reliability of appliances. They found **efficient messages** to reiterate that after an energy renovation, it is enough to start the heating period later in the fall, that they can be without air conditioning during summer, and that their home becomes more valuable.

Manufacturers tend to emphasize systematic thinking (planning elements of a complex renovation depending on each other), joint representatives tend to emphasize the possibility of applying for subsidies and prefer complex renovation. Contractors can persuade customers to higher technical content by claiming that they can save space in the apartment or house with a modern, compact device. And overall, a complex renovation can be a good investment: even with a long return, in 20 years they can provide 5% interest. In general, manufacturers suggest that the possibilities are worth communicating.

Although the common representatives say that residents are very problem-motivated, meaning that they act only when something is already in a very bad condition, exemplifying similar, successful renovations in the vicinity can still be an effective strategy.

Interviewees generally consider these investments to be **profitable**. Although in case of complex renovations, which can save significant energy and costs, return can be really long-term, while a simple boiler replacement can return in only 5–10 years. Since the savings are already perceived in the short term, it is worth communicating these benefits. In condominiums, the return is not so important, and unfortunately, residents often do not

even use the renovated apartments properly (the window is still open in winter, they do not heat less, etc.).

The most important **sources of information** for renovators are the internet (forums, manufacturer's website) and neighbours and acquaintances. However, if they get advice from an energetic, specialist or contractor on a certain issue, it will usually be decisive, unless they have existing experience of their own. The residents of condominiums and common representatives get information from tender writers, while in smaller settlements the local specialist is the decisive source of information.

Manufacturers have good experience with open, self-taught and do-it-yourself residents seeking advice from manufacturers, while often very bad with contractors with decades of professional experience but outdated knowledge, yet confident and adhering to many years of (wrong) practice, who unfortunately often give harmful advice to renovators. This means, unfortunately, that the way of "what the neighbour has made should be good for me as well," don't always lead to good results.

Some residents and condominium representatives have very **incomplete knowledge**, while others do serious pre-studies on the Internet and often get into work with high expectations. However, even in this case, the ability of a specialist to influence the content and decisions is very strong.

According to the interviewees, the **most effective communication channels** are: local newspapers (newsletters, "Lokál"), internet, lectures, building communities and clubs, TV advertising, social media, websites, webinars, exhibitions, conferences and professional forums /days and expos. Good channels can also be roadshows, local briefings, and it would be worthwhile for RenoHUb to attend residential condominium meetings as well. If we look at friends, neighbours, acquaintances as one of the important channels, it makes the factor of trust and credibility very important, as we will have to compete with these channels. As professionals and contractors are the other very influential group, some manufacturers place great emphasis on training and informing their own stakeholders, fitters, business partners and contractors.

The **motivation to renovate** is greatly influenced by tender opportunities, state subsidies. The slowdown in their momentum has a visible effect, although several contractors report continued serious interest, which was only repulsed by the coronavirus, so more people postpone their planned renovations. Other contractors also reported positive trends due to wage growth and a good investment opportunity. However, condominium investments in rural areas are stagnant, many common representatives would need information on available funding sources. Some of them noticed that many families are waiting for governmental subsidies for renovation. Manufacturers are noticing that the technical aspects are becoming more and more important, people are looking more closely at what they are spending for, although energy awareness is only moving forward in minor steps.

The **differences between the renovations of family houses and condominiums**, according to the contractors are that the condominiums are mostly characterized by more complicated decision-making, which is why they prefer to work with family houses where they have an easier path.

Manufacturers see condominiums taking things more seriously because of size and spending a numerous people's money. Therefore, they think systematically, don't give up on technical content (i.e. they don't buy a lower quality boiler just because it's cheaper), warranties are important, expectations are higher. However, the technical content is usually already decided when they contact to them, therefore they have no or limited influence on them.

At the end of the process, the residents are most **satisfied** with the reduction of the heating costs, that they have a nice, new, modern, silent device, and that the house/apartment is modern, refreshed, beautiful. In the case of condominiums, residents are usually happy that the house has become more aesthetical, and energy savings can reduce the shared expenses or they do not have to raise it. However, the contractors and manufacturers do not really get **feedback** regarding their work: usually only the complaint, the problems get back to them, there is no follow-up. However, we heard a positive example from one of the manufacturers who writes to each of their customers in a year's time to ask for the experience of his former clients, how much the new device consumes, are they satisfied?

4.2.2 Concerns

Renovators are extremely worrying about everything at the beginning of the process. Unpredictability, uncertainty affects many important elements in the process – money, time, quality – while temporarily making their home unusable, uncomfortable, full of dust, dirt, with everyday hustle, things to deal with, and perhaps having to consult sometimes unreliable or hard-to-understand contractors on issues where they are laymen, often they don't understand the issue either, but it will cost them a lot.

One of the most important issues, which are crucial at the beginning of the process and depressing them is **how much the planned renovations will cost**. However, in the beginning the contractors are difficult to answer this question, because certain details – which will turn out after advanced energy or other expert audits are taken place – will only be available later, which can hide surprises later e.g. in a case of renovation of an older building. Next to this it is very common that customers change their plan during the renovation process, growing their demand, and so is the price. Simultaneously, the frustration grows around a second central question: will we have enough money? **How will we finance it?** These questions give birth to "smart" but unfortunately often failed solutions, often cancelling potential savings or warranties for black jobs – so unfortunately renovators may already be concerned about **quality**.

Manufacturers often encounter fears as to whether the **product will really be reliable**, not a too fine, complicated, modern gadget?

Finally, common representatives are most often concerned that residents are very afraid that some residents will not pay the – possibly, temporarily even higher – shared costs. In addition, there are fears of **burdensome shared costs**, credit, and the common representative stealing money.

Unfortunately, much of the concerns are justified: the work really involves dust and dirt, although it can be a great help both mentally and in practice if the contractors put the site

in order at the end of each day. The planned budget is usually not enough, because in the meantime customer needs change or new problems may arise, however, this can be handled to some extent by planning a safety budget. Fortunately, at the end of the process, the euphoria about a beautiful, new-like, comfortable, efficient home - and a state that is finally recovering - masks the inconvenience. Concerns about shared costs and credit are usually not confirmed in condominiums.

4.2.3 Challenges

Unfortunately, the renovation process sometimes **gets stuck** or even fails. Fortunately, it happens rarely, but in case of family houses, work can be stopped or delayed due to the client's financial problems or a **series of redesigns**. Old buildings can have surprises, structural problems, and even **run out of money** because of these issues. When contacting contractors, it can be a problem that the ideas, needs of the renovators and the realistic solutions do not overlap. During the construction, inconveniences can cause various human reactions and conflicts.

In the case of **condominiums**, it can cause difficulties if the common representative does not have the support of experts, organizers, planners who could help him/her to answer the questions of the residents. The **joint decision** is often very difficult and protracted, sometimes only after repeated meetings and individual discussions can they reach a point when they can vote about a common decision. Already a few hostile voices can affect the whole community, and opponents can get into majority, if they do not see their self-interest in the plans. Due to the cessation of building saving accounts, it may also be a problem to collect their **own contribution**, and the lack of application and subsidy opportunities is also making their opportunities tighter. Common representatives do not receive an extra allowance to manage a complex renovation process: if this **extra work** fee could be incorporated into the condominium shared fee system, they might be more motivated.

It is a huge challenge for the **contractors to keep their schedule**, the sequence of their projects. Unfortunately, they usually depend on the work of other professionals as well, therefore these difficulties are difficult to overcome. The other problem is **the increase in the price of materials**: if the renovation process is delayed for any reason, the provided price, set in the contract, may be postponed to the next year, and this - especially nowadays, due to the historical EUR-HUF exchange rate - can cause significant losses for the contractors. This risk is exacerbated by the current MFB 0% credit facilities, which need to be planned and documented relatively early in the process, putting contractors under conditions over which they have no control (e.g. depending on finishing the gas meter connection). Although domestic capacity is generally satisfactory, because of the coronavirus, **supply is interrupted** in some places, while **lack of experts, contractors** in different critical areas are situations the industry has to deal with since years.

According to the contractors, the most significant challenges **for renovators** are to create the financial background and to organize the whole renovation on their own: "to organize alone requires a superhuman". Arranging official permits and finding a reliable contractor using up-to-date technical solutions is also a challenge.

The largest challenge **for the common representatives** is to convince the residents, to get to the decision and to deal with the conflicting counter-arguments. They require a lot of extra energy and time, which they are often unprepared for and unpaid for.

The challenge **for manufacturers** in the process is the lack of money of renovators, but mainly the lack of professionals. In this connection, it has been mentioned that nowadays they face construction faults again which have been not seen for 10 years since many contractors starts at constructions as professionals without proper professional qualifications, and they are difficult to filter out by the renovators. It is even important to dispel misconceptions: renovators tend to think what is more expensive is better, although often the needs and endowments of the house determine what would be needed.

The renovation process would be **supported** if the contractors had a separate person to deal with the above organizational, administrative problems; in the case of condominiums, if there were a mediator between customers and contractors.

In case of **manufacturers**, it seems a good solution to take care of all matters related to their product (even with the involvement of other professionals), to give customers a full cost estimate for the offer, in addition to which there can be no extra costs – and which solution is widely popular amongst the renovators.

The **common representatives** had help if the residents could be educated by decision support trainings, events, residents info days and information materials and credible online sites. They would also need complex professional support, which includes a technical, financial and operational part. Simpler administration of loans and applications would also help them a lot.

4.2.4 General experience of the renovation processes

The **contractors** are generally satisfied with their finished works and the overall renovation processes in the last few years. Thanks to the online channels, communication is much faster with customers, and they generally manage to precede the subsequent complaints thanks to the thorough pre-discussions. Individual entrepreneurs strive to train themselves so that they can also do work related to the most up-to-date technologies.

For **common representatives**, in recent years, some abruptly law changes for condominiums worse financial conditions, and unexpectedly high prices caused unplanned surprises are, however, they are trying to find solution for all issues. Residents have reported that the renovations have taken too long time and they want to work with shorter lead times. Otherwise, the renovation processes were considered effective, but they received strong professional support, without which they might not have been able to cope with the renovation works. Some common representatives within this support was given exact wording to each administration tasks, the managers supporting them handled all information and communication flows with the residents in person and on paper as well, furthermore, they even moderated the contractors' and financial communication. Thus, the common representative was left with only the handling of telephones and complaints, but he also had a lot of work to do.

4.3 Interviews with municipalities

The structure of the interviews with municipalities differed significantly from the ones with constructors, manufacturers, etc. described so far. These interviews were strongly **focused on possible future cooperation opportunities**, so a full presentation of their findings in this document would not make sense. However, the following are some typical trends highlighted by local governments that may influence the design or communication of RenoHUb services.

4.3.1 About the implemented renovations

Some of the responding municipalities consider that **the majority of condominiums** (approximately 60–70 %) **were already modernized** from an energy point of view between 2005–2015 during a wave of renovations. Participants loved these programs very much, they were relatively simple and in some cases the city was required to check the applications before submitting, so not only the applications were successful, but a relationship of trust was established. The popularity of the tenders was increased by the fact that the return on investment and the increase in the value of the real estate were quite well calculated.

We have heard of an **example** about a so-called **condominium renovation fund**, which was specifically targeted for renovating condominiums, in some cases for energy purposes. They offered schemes that included deductibles, interest-free subsidies and non-refundable subsidies. Hundreds of condominiums received support, but very few of them saved significant energy by renovation. In other settlements, the municipality carries out social renovations every year. In family houses thanks to family support systems, young families under the age of 40 have renovated or built according to the municipalities.

4.3.2 What obstacles do they see?

Definitely the **lack of capital** is the major obstacle to reconstruction both for municipalities and for condominiums and detached houses. Regarding the renovation of municipal properties, they said that they are struggling with their **unpredictable economic situation**: it is a huge challenge to make a complex investment out of their available capital, even with the right tender and credit, so as not to have to delete otherwise necessary investment elements. There are also difficulties in securing **funding**: there are also political risks and legal conditions for borrowing, which may not be met. In the case of old buildings, there is no or incomplete design and construction documentation, or it does not contain what was actually implemented. It can also be a problem that in a functioning kindergarten or residential building, identification of the state of real estate cannot be completed.

Despite the problems, numerous cities carry out many **social-based renovations**, which are funded from their own budgets and then, after renovation, rented out to the local people on a social basis for a token amount. There was also a tender in which the municipality bought apartments to be renovated and rented them out after renovation. In both cases, however, the problem is that the payback period is unlimited.

Project bundling seems to be a good opportunity to reduce costs, i.e. to obtain quantitative discounts by linking renovation projects in a given area. According to them, this could be done at the city level, but the possibilities are narrowed due to the fact that a lot of public buildings, real estate had already been renovated.

Housing communities also need borrowing, which is sometimes very difficult to start: it is difficult for them to make a joint decision, and applications are often very narrowly tailored to their needs. Also highlighted were condominium joint ownership vs. private property problem, for example with legal issues such as how far a balcony' envelope is the resident's property and from where is it owned by the condominium.

The main barriers to **family houses** are the **lack of support** and the fact that it can be too difficult for them to apply and to account. It is often easier and cheaper to solve with little hustle.

They notice that the public has recently considered companies dealing with tenders or bank loans aggressively pushy therefore they do not trust them. Thus, the enthusiasm for the available interest-free loans did not increase as much, due to the lack of confidence on the one hand and the complexity of the application on the other.

4.3.3 How can renovations be encouraged?

They see in general, that processes could be made more **transparent and systemic** with a conscious, **scheduled strategic planning** and a more **predictable economic environment**.

In the case of detached houses, the family support system is a good example of an incentive, and condominiums could be helped by tenders and by creative, proactive people.

The municipality would also find it very useful to have a program for **educating common representatives**.

4.3.4 Challenges for the coming decades

It is a challenge to find the unique features that serve the needs of a district or condominium (e.g. solar panel, solar collector, sunroof surface, heat pump). It is also a task to ensure compliance with increasing EU standards and the necessary resources. In older buildings, they should strive to find technologies that can be built in them.

Accelerating global warming and the formation of heat islands are also a challenge. The summer heat is a pressure on the population and, unfortunately, air conditioning is used instead of shielding. More complex energy programs would be needed, which also take these aspects into account.

4.3.5 Possible cooperation with local municipalities

Cooperational base with municipalities could be collecting **best practices** in national and international level. It would also be important to support **access to application resources, information and knowledge sharing**, awareness-raising, school and kindergarten

programs. All this could be envisaged in the framework of a long-term cooperation agreement, in which tasks, goals and resources are also mentioned.

But it is also considered feasible to **run this service within the organisation of the municipality**. Furthermore, an **office** could be operated **in collaboration** with local university and local government institutions.

Due to the public's present distrust of current applications, there is definitely a right to a one-stop-shop model and to advisory offices at the local governments or jointly with them. The funding of the consultants could be undertaken by some municipalities in exchange for non-financial results, such as awareness-raising, better air quality due to energy renovations, etc. In this case, the municipality would focus primarily on condominiums with more attention, as great results can be achieved quickly here, it is easier to calculate, and they already have experience in panel programs, for example.

It was emphasized that it is not always necessary to think in terms of money: if the local government e.g. provides an office or possibility of presence for free, it would already help the goals.

Another way could be to become an exemplary municipality with showing different attitude by operating a participative office. They see they can do steps to make the information available to those concerned not only in theory but also in practice.

In order for a consulting office to become self-supporting, further collaborations and searching for application sources, conversion of consulting activities into revenue, incorporation of sponsorship money (from manufacturers) and participation in research activities, market research, identifying needs may be required. This could be financed by introducing property taxes, eco-taxes and these could be spent on green investments, and if stakeholder companies could help, they could also benefit from EU programs.

The public generally has confidence in local governments, so in order to be able to set up consultancy offices with the municipalities, it is worth informing them about these opportunities at the beginning in order to make them as interested as possible in this cooperation.

5. APPLICATION OF RESULTS

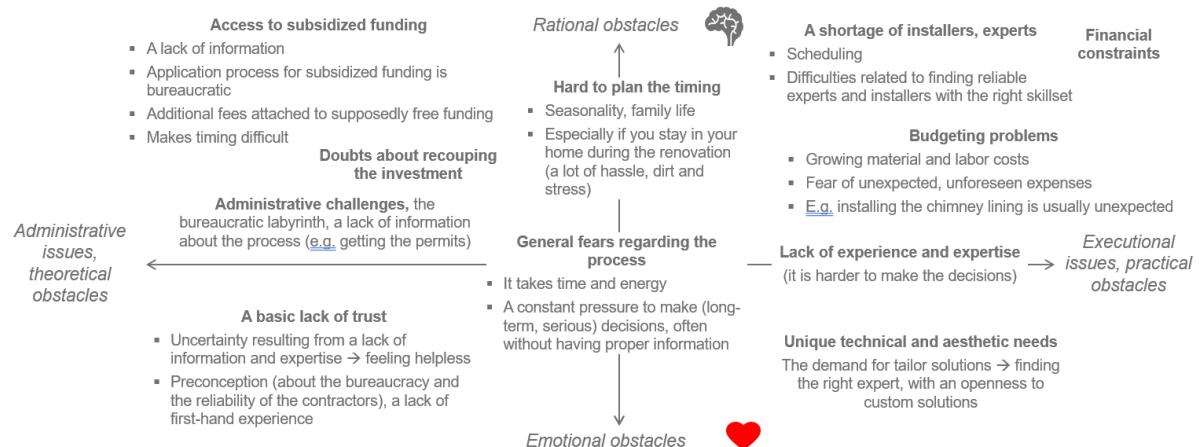
5.1 Designing a service that meets the needs of renovators

One of the key lessons from the research learnt is that people look at **energy efficiency projects as part of the commonly used “renovation”**. For property owners, these primarily aesthetic works are more important overall – mainly due to the size of the investment and the immediate improvement in comfort levels – but they cannot be managed independently and separately from energy and other renovations, which are even implemented in a complex project. In this context, it is an important discovery that consumer needs for renovation work are much broader than the concept of a one-stop shop with a primarily energy efficiency approach.

The **cost of energy renovations** competes with other items that often do not pay off, but for aesthetic, comfort, or status reasons, they can still take advantage. Examples include renovating kitchen furniture or a new TV. In contrast, energy renovations, which offer long-term returns with often not tangible or transparent benefits, are at a disadvantage. People renovating homes are **primarily motivated by benefits that offer an immediate** (not necessarily financial) **return**. These include the aesthetic benefits of the refurbishment (freshly painted walls, new windows), the new, more convenient functions (mosquito nets, tilting windows, remote control or intelligent boiler or water heater), healthier, more sustainable living environment (mold disappearance, warm floor and near-wall places) and of course lower energy costs. The “theoretical” aspects of energy efficiency (efficient, environmentally friendly, “green”, etc.) do not yet significantly influence people’s decisions.

When renovating their homes, people usually invest in all three areas (insulation, doors and windows, and modernization of the heating system), although they often do it **step-by-step**. There are predominantly financial reasons behind the phased renovation work, which shows that there is a huge need for information on the applications currently accessible and the financial support options available. The main challenges and difficulties associated with renovation work came from the complexity of this type of work. There is a great need to have all the information easily and transparently in one place before and during the renovation process, i.e. there is a great demand for simple and clear project management. Since the combination of different types of work is expected to result a relevant, immediate and long-term return even in phased construction, a **sophisticated renovation plan** involving experts is inevitable – otherwise demolitions, moldy walls and frustrated renovators can be the result of the renovation process. There is usually a great deal of mistrust and risk of contractors: the budget can inflate at unreasonably high prices, while it is uncertain that they will receive good value for money at the same time, so a well-developed database of contractors can make the service very attractive. The credibility and practicality of the database can be enhanced by, among other things, the reference of the craftsmen and the personal opinion of the users. Since good contractors are tied up for at least 3 months, but sometimes for a year in advance, and repairing accidents (broken equipment) can be a problem in many cases, it can be worthy if the database can provide a solution for this incidents by special marking of craftsmen undertaking small jobs. The database also provides an opportunity to expand

the service to items related not closely to energy renovation, so that over time, even painters and home decorators could appear in the database.



The greatest **obstacles** to energy efficiency improvement projects are primarily the result of a lack of information and of financial constraints (high labor costs and a long return on investment). With regard to barriers of renovations and fears (summarized in the figure above), our service should provide clear and unambiguous solutions, reducing the lack of information, uncertainties about costs, contractors, and results. All of this should be manifested in an attractive, transparent, informative and trust-building online platform, as well as friendly and helpful offices – their detailed elaboration is the task of Work Package 3.

An overview of **customer needs** and renovations will also help to find potential intervention points and the needs of renovators at that point. Thus, for example, at the beginning of the process there is a need to raise awareness, to inform about the benefits; later to review the steps of the renovation process, browsable product selection guide materials; the contact details of appropriate professionals, assistance in choosing between refurbishment options, setting up financing, selecting reliable contractors, and quality assurance. The detailed customer journey with all needs and intervention points will also be found in the results of Work Package 3, which will be a direct input to the online platform.

It is important to identify the **situations**, life events, along which people “drift close” to a **possible renovation**, when our service must be able to address them, and building on these situations, to support the realization of quality renovations. Examples of such situations are the expiration of housing savings or the sale of a property, which might involve constructions and renovations. At the same time, it is necessary to identify those multiplier actors who meet often and with many potential renovators, and whose opinions have a great influence on them. Finding, reaching them and raise their awareness is therefore also essential. Examples are construction professionals, who will be provided with professional training for this purpose (Work Package 4); also common representatives, housing association leaders, municipal employees, real estate agents and so on.

5.2 The perception of the one-stop-shop concept

The main idea of the one-stop-shop concept was **received favourably, as it addresses the most important needs connected to home renovation**. Its main benefits are the followings:

- **Supporting decision-making** (a wide range of information related to renovation);
- The renovation process is **managed by one person**: simplicity, transparency, 'hassle free' implementation are depending on a dedicated project-manager (contact person);
- **Predictability** (time and finances).

5.2.1 Finances

Based on the benefits, the target group does not expect a free service, but **a non-clearly communicated (supposed) price can be a significant potential barrier** for consumers. The renovators would not pay a lot of money for the full service of the one-stop-shop: the price of the energy efficiency renovations is high in itself, especially if the contractors work without 'smart' solutions nor tricks. It is possible that the contributing partners of the one-stop-shop would finance partly or fully the one-stop-shop service, namely the brands and companies appearing on the online platform, rather than the end users. The online platform itself, if used only for gathering information, could cost nothing or only a symbolic price could be acceptable by the users, latter if they can enjoy additional advantages of it such as a personal profile after registration or free, downloadable template documents. Again, transparency and clear definition of prices at different levels of service usage are of utmost importance.

5.2.2 The role of the online platform and advisory offices

Everybody found the **online surface as a source of information** very appealing, but only online-savvy people would actually get things done here. In addition to providing a wide range of information, the verification role of the online surface is very important, too, by providing an opportunity to **share experiences** and to give **authentic feedback**.

Information offices (HotSpots) authenticate the service by creating opportunity to meet in person, which generates trust. Reliable and accessible operators are crucial for the target group that prefers offline channels. Municipalities are important potential partners of the one-stop-shop network, however, their perception was mixed, therefore communication should eliminate the general preconceptions towards municipality background (such as providing slow, bureaucratic processes).

5.3 Target groups of the service

If we group the renovators according to their online or offline activity as well as their confidence, we can define two main target groups regarding the online platform and the offices:

1. They plan to use the service primarily only as a source of information, who:

- are still at the beginning of the process, before decisions are made,
- are confident in their renovation with technical knowledge or DIY experience,
- are planning a less complex home renovation project,
- are mainly planning to carry out the constructions by themselves.

2. They plan to use the full service, who:

- arrive at the beginning of the process, before making decisions,
- are inexperienced and dislike to have technical or home improvement tasks by themselves,
- are planning a complex renovation project,
- are living in a family house (greater autonomy in decision-making).

However, there are also significant **challenges** in serving the two layered service list and the two target groups.

The message of 'complex, full support' is problematic: renovation is a more complex field than energy efficiency improvement, so there is need for including other services and fields related to home improvement, beyond energy efficiency (or at least channelling them). Therefore, if the above categories will exist, the potential customers will expect more than only energy efficiency services – therefore, it might provide a fuller service if other services would be channelled in.

The potential customers might be afraid because of the presumed extra costs of the services. They can be afraid of commitment, of being 'forced' to do choose certain solutions, having narrower choices (e.g. "Can I only choose from their list of contractors?") and mandatory elements in relation to the service.

A huge challenge is that as a **result of transparency**, in order to ensure guarantee and quality control, that it will not be possible to continue practices in the **gray economy**. This means a significant extra cost to the users (25% VAT), which they do not (always) have to pay without using the service.

Credibility and building trust also generate challenges. This is an entirely new type of service and player on the market, without any reference, while a general distrust is common on the industrial market. It is also difficult to communicate the entity behind the service: interpretations and associations of the focus group interview members were very mixed. If a company is behind the service, they supposed that it wants a certain profit. If they are not a for-profit company, maybe they are even not professionals? If the entity is a non-governmental organization, they might be not properly organized; if they are (part of) the local government, their service will certainly be slow and the operators will be inaccessible.

5.4 Communication of the one-stop-shop system

5.4.1 General communication recommendations

In addition to improving energy efficiency, it is important to think about the related areas, because, as we have seen, energy modernization is often integrated into other renovation processes. The planned service may be relevant at any stage of a renovation process, so it is advisable to plan it in a way that enables those interested to join the process at any point along the customer journey.

Besides the online communication channels focus should be on both the traditional and offline channels as well as the target group is very diverse. Older people living in rural areas might be reached mainly at local, offline channels. There is a general lack of trust in the construction industry, so personal recommendations play a very important role in building trust and credibility - and the online platform and offices have to compete with this. The personal recommendations are therefore crucial, therefore similar communication solutions should be used e.g. with cooperation with brand ambassadors, influencers. Also for this reason it is important to offer a forum for the service users to feedback their experiences, in the same time helping the new potential clients to be convinced about the reliability of the service in a familiar way.

5.4.2 Communication policies and content

Taken into account the results of the above research, the following guidelines can be used to effectively and successfully communicate the planned service of RenoHUB:

- **Clear and simple:** both the communication and the structure of the website should strive for this.
- **Focus on immediate benefits:** energy efficiency itself is promising mainly future benefits, therefore, regarding refurbishment motivations, it is important to communicate the immediate benefits (comfort, aesthetics, energy cost savings).
- **Flexibility and freedom:**
 - The service will support the renovators, but without limiting the possible solutions.
 - There is no need for commitment but can also be simply used to obtain information.
 - It is also not required to choose the professionals nor the contractors from the database.
 - The service can be selected and joined at any point in the home renovation process and can provide relevant assistance at any time.
- **Credibility:** this is the biggest challenge in communication, so the credibility of the "brand" and services must be supported by all possible means.
 - Have a strong presence and influence of experts, especially at the initial energy audits.
 - The services offered should be supported by credible user opinions and feedback, based and focused on user experience aesthetics.
- **Security: reliability transparency and simplicity should be ensured** (regarding the renovation process, the service and content of the website).

- Emphasis should be on accountability (not necessarily on guarantee!).
- **Tailor-made:** due to the wide variety of target groups and different renovation options, it is important to emphasize personalized solutions and unique support.
- **Independent, brand-, technology-neutral, and non-profit:** many potential renovators have some bad experiences in relation to aggressive bids, where they felt that the certain service narrowed down their possibilities according to the interests of the supplier trying to influence them to purchase their products and services. It is of utmost importance that during the renovation process the service should support and lead the clients on a professional basis, for the benefit of the customer and his goals, in a technology neutral way.
- **Customer-centric:** one of the most important features of the one-stop-shop services is that most important is the customer and his/her needs, rather than the system itself. To this end, the customers are friendly, understanding, equal partners to assist and the goal is to support them to oversee the process and the steps leading to their goals and decisions.