Save the Homes

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1 Executive Summary

This report presents the outcomes of the Task 4.6 concerning the realization and reported (satisfaction evaluation) Sav€ the Homes customers satisfaction (after work is done; Stop 4 - In-Use phase).

A common protocol to evaluate the transferability of the Citizen Hub is defined following all the steps implemented in the two pilots and considering their results, in terms of T4.2 indicators, T4.4 risks, T4.5 monitored data, and any other lessons learnt, reflections & bottlenecks. This protocol will be discussed in WP5 with other members of the StHRB to evaluate the Citizen Hub applicability to other cities and regions.

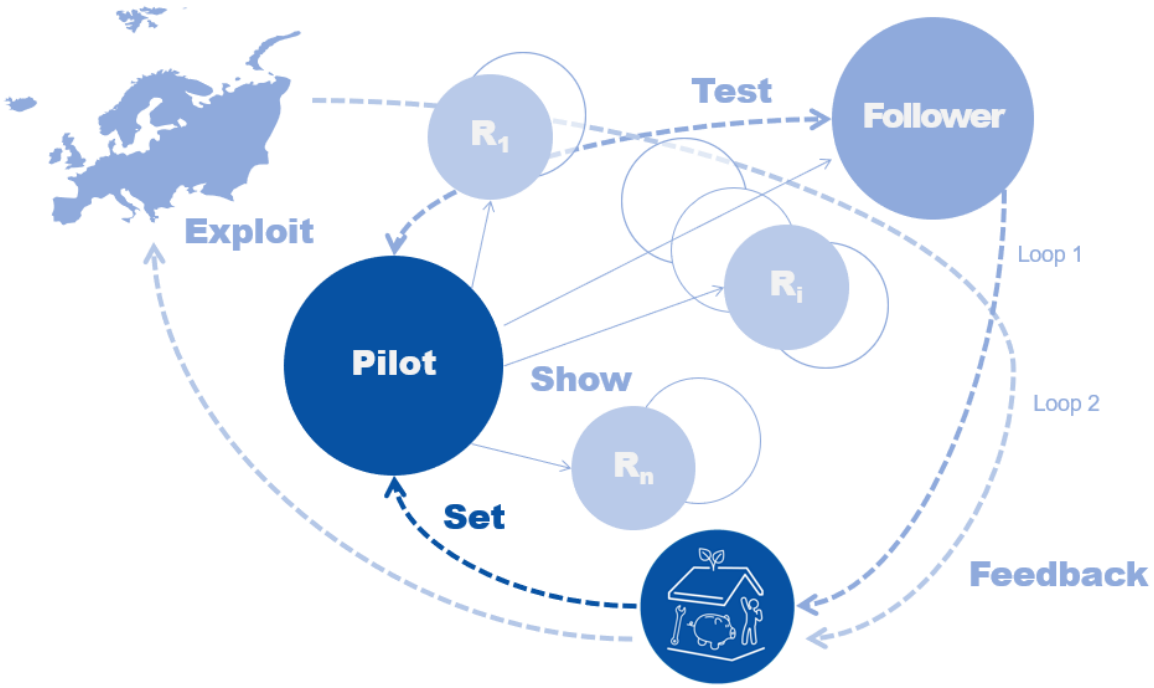

Figure 1.- Feedback loops to assess replicability: Setting the StH model

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2 Introduction

Investments in renovations of homes are vital for the environment, economy, and people's quality of life. Europe is struggling with an aging housing stock where only 10% of buildings currently have A or B class energy performance certificates. Next to that, the condition of a house is increasingly related to health due to demographic and climate change. Living in unrenovated homes can have major implications for your health while improved housing conditions may save lives, reduce health risks, and increase quality of lives. In order to limit the global warming, the carbon dioxide emissions have to be reduced to zero.

Buildings are responsible for more than 30% of the global energy consumption, so to reach the near zero-emissions goal, the global emissions from existing housing stock must have been decreased by 80-90% in 2050 compared to the levels of 2010. To achieve this reduction, the renovation rate of the EU existing building stock has to increase. The building stock has a large energy saving potential by i.e., improving thermal insulation, energy efficiency of technical installations. [1]

Thus, by renovating residential buildings, an opportunity presents to achieve major improvements in health, comfort and well-being, and energy savings. However, the renovation process is complicated and unattractive for citizens due to many barriers in the renovation industry, such as the uncertainty of the results, the lack of trust or the fragmentation of the market.

Save the Homes wants to stimulate home renovation demand and increase the home renovation rate in the EU through the implementation of the Citizen Hub concept, an innovative "integrated home renovation service" at local (City of Rotterdam) and regional (Municipality of Valencia and Valencia Region) through the implementation of "one-stop-shop" (OSS), based on previously developed Citizen Hub models, mapped knowledge and prepared strategies. An overall monitoring action and quality assurance plans are laid out and followed throughout all the stops of the Customers Journey stops.

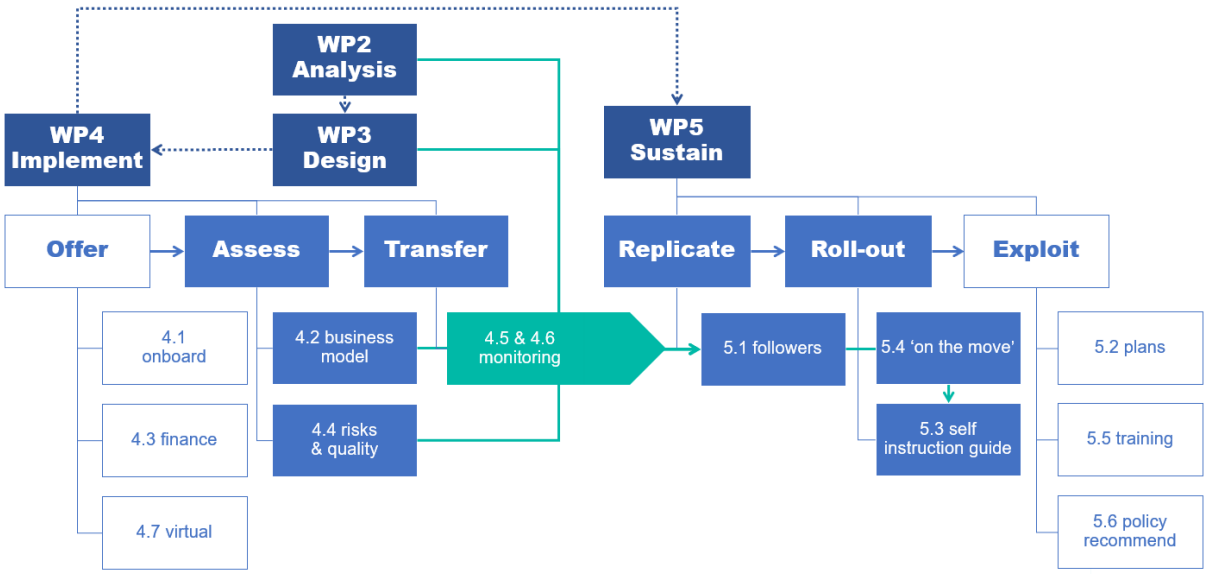


Figure 2.- Save the Homes Citizen Hub Concept deployment

[1] IPCC, 'Summary for Urban Policy Makers: What the IPCC special report on global warming of 1.5°C means for cities', 2018

This task concerns the realization and reporting (satisfaction evaluation) of the Sav€ the Homes customers satisfaction (after work is done; Stop 4 - In-Use phase), and includes a common protocol to evaluate the transferability of the Citizen Hub, defined by following all the steps implemented in the two pilots and considering their results, in terms of T4.2 indicators, T4.4 risks, T4.5 monitored data, and any other lessons learnt, reflections & bottlenecks (D4.8).

This protocol will be discussed in WP5 with other members of the Save the Homes Replication Board (StHRB) to evaluate the Citizen Hub applicability to other cities and regions.

3 Implementing the Citizen Hub model

With the main aim of stimulating home renovation demand and fostering the renovation pace across Europe, StH introduces the Citizen Hub. The concept behind it is to serve as a one-stop-shop entailing all the services and assistance needed for clients interested in a home renovation project, for their whole customer journey. StH project described (D4.3) the necessary steps for the implementation of a Citizen Hub and the implementation work plan that shall serve as a supportive guideline entailing important measures and specificities along the process, and the evaluation of the customer journey offered by the Citizen Hub (D.3.8), as well as the results achieved (D4.8) in each pilot.

3.1 Save the Homes Customer Journey

The customer journey describes the experiences, behaviour, and decisions of a customer when interacting with a brand, service or company in the process towards purchasing of goods or services. The full process describes the entire journey. From the very first contact until completing the actions and being an ambassador after.

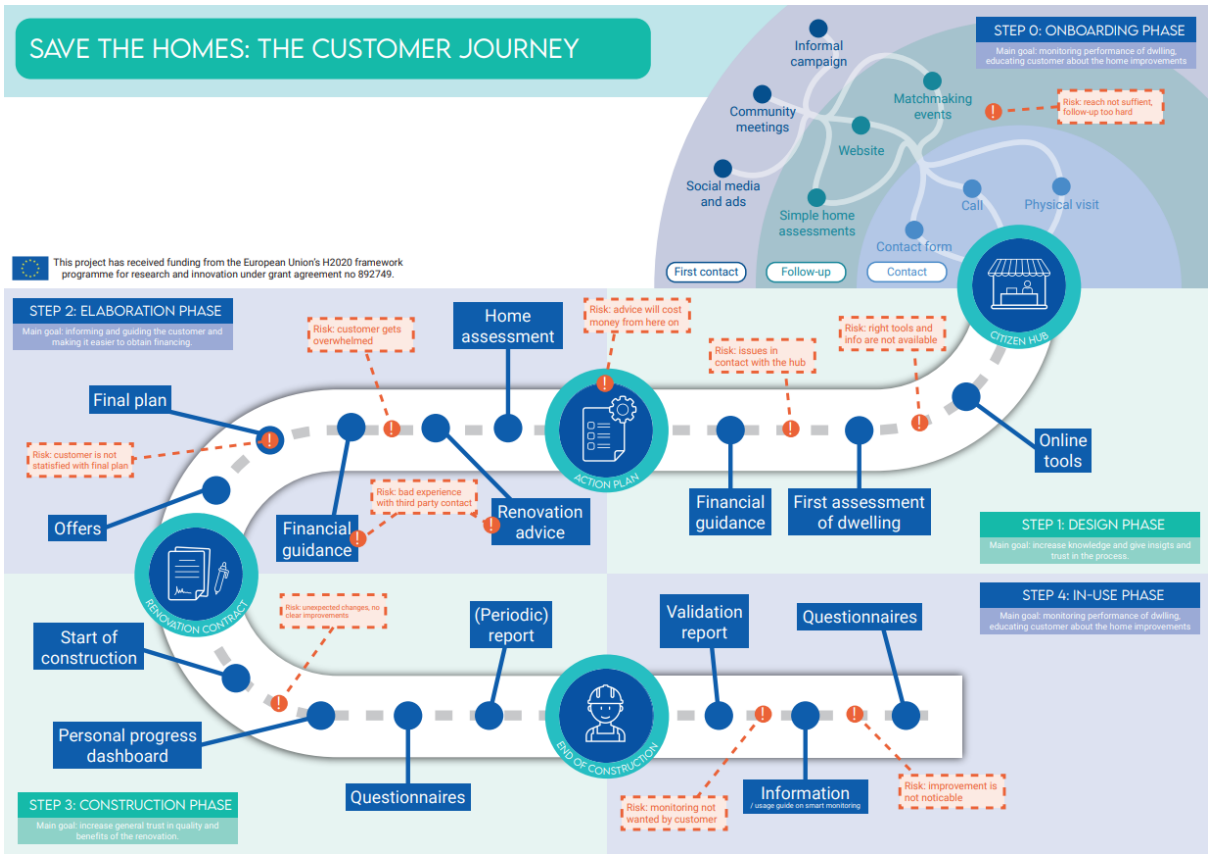


Figure 3.- Save the Homes Customer Journey

The journey consists of several steps that are walked through from the customers perspective, the exact number of steps depend on the customer journey model, however when comparing different models for a renovation customer journey a general built-up can be seen[2]:

These steps are the base of the customer journey model and follow the decision-making process of the customer. The transition from one step to the next is crucial. The points of interaction between the customer and the company or brand are so-called 'touchpoints. The touchpoints link directly to the experience of the customer in each step of the journey. Each step has its own drivers and barriers which show the reasons for the potential customer to continue or to quit the process (see also D4.5 Action Plan, risk assessment and quality assurance of renovation activities for a step by step elaboration).

3.2 Implementation Guidelines & Workplan

Each phase of the customer journey intends to ease the renovation process and makes the whole experience user-friendly and appealing, and each has its own goal in terms of home renovation stimulation (or success rate). The following sections describe the results achieved in each stage for the two pilot cities and analyses the transferability of the implemented strategies, following the StH Citizen Hub model implementation guideline and work plan (D4.3), meant to give easy to follow recommendations and insights based on the experience of StH in the pilot cities of Valencia (Spain) and Rotterdam (the Netherlands). This way, the different socio-economic contexts and regulatory frameworks entailed in each pilot city shall serve for the sake of comparison in the process of replicating the project elsewhere.

The guideline sets the following steps:

- Market Analysis – demand assessment
- Business model definition
- Set-up and physical office definition
- Citizen Hub's ecosystem – contractor training and verification
- Services and process flow
- IT tools
- HR and staffing guide
- Communication, sales, and marketing tools
- KPIs and monitoring plan and/or system

3.3 Demonstration & Evaluation of the Customer Journey

D4.1 was devoted to the start or Onboarding phase of the customers journey, both physical as also web based dissemination and communication (via social media and websites). The aim is to encourage homeowners to come to an office or a meeting for a 'Want to know more' appointment and create interest to use tailored online tools and come to Citizen Hub matchmaking events. This task finished with reporting of the **recruiting campaigns** success rates in the targeted neighbourhoods.

D4.8 evaluates stop 1 and 2: At the physical office, this task will ensure that building **owners are getting holistic renovation service** by covering the technical package (assistance on choosing the right

[2] N. Nieboer and A. Straub, 'How do customer journeys regarding energy investments look like?' Conference papers of the European Network for Housing Research (ENHR 2018): More together, more apart: Migration, densification, segregation ENHR, 2018.

technical renovation package through a cocreation), financing package (to find the most suitable financing option for them), regulatory package (offering a contractual template and guidance on the legal aspects). It is evaluated how many channels have been used efficiently through the use of a **common protocol**, based on D3.7, where the following questions are addressed: Is the Citizen Hub facilitator helping the homeowner to achieve their goals; is the network of Citizen Hub network working as foreseen? Is it a user-friendly system? How aware are the citizens of the service provided by the Citizen Hub facilitator? Are the objectives in terms of dwellings and/or buildings renovated reached?

D4.8 also assesses stop 3 and 4: Complaint system takes into the account the complaints from the homeowners. The Citizen Hub facilitator takes a role of a mediator to ensure the process is resolved to the **client's satisfaction**. It will be evaluated if during the renovation enough interaction with homeowners has been ensured. The Citizen Hub model will be improved for further roll-out if a repetitive issue is identified during this review. Here, **monitored results** are compared in before and after conditions for validation and fine-tuning purposes. The protocol addresses the following questions: Is the information provided by the Citizen Hub offices complete? Does it cover all the aspects agreed? Is it consistent? Are there no contradictions among the different pieces of information?

Finally, D4.2 **monitoring KPIs** help understand the performance of Citizen Hub business model and measures: 1) its sustainability: ability to produce revenue and break even, 2) quantitative KPIs on pipeline, support, and execution of projects, 3) social, economic and environmental impact and 4) roles of partners in the process.

4 The StH transferability protocol

This protocol aims at evaluating the transferability of the Citizen Hub concept as defined by following all the steps implemented in the two pilots, and considering their results, in terms of T4.2 indicators, T4.4 risks, T4.5 monitored data, and any other lessons learnt, reflections & bottlenecks (D4.8). This protocol will be discussed in WP5 with other members of the Save the Homes Replication Board (StHRB) to evaluate the Citizen Hub applicability to other cities and regions.

Based on the implementation experience, a 5-steps replication process for transferability assessment has been defined, trying to simplify and balance the volume of activities needed for each.

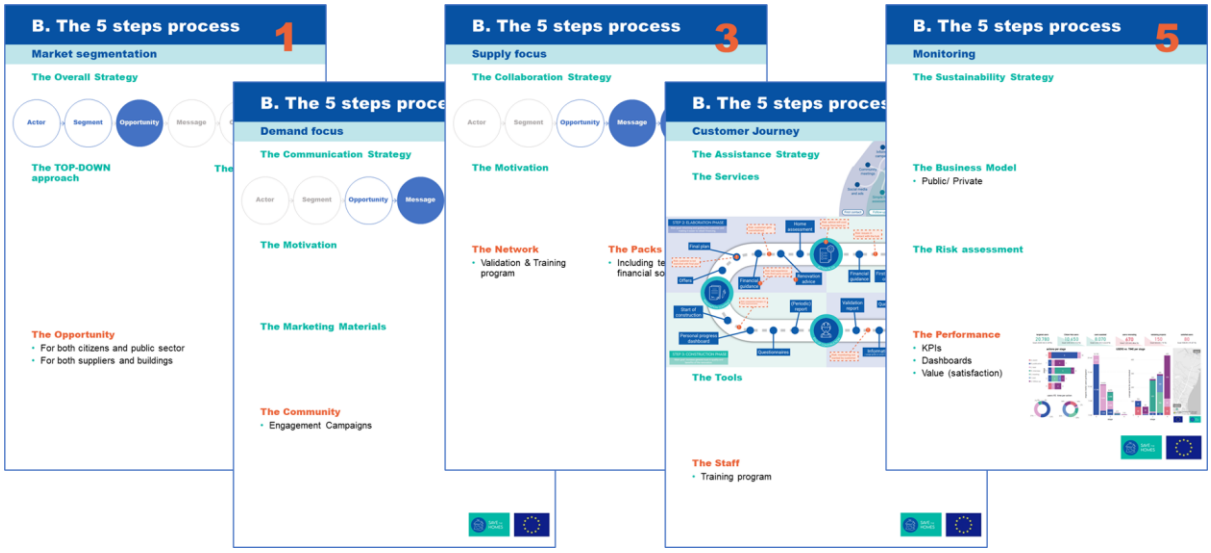


Figure 4.- The 5-steps replication process to assess transferability

4.1 The pilot sets

Two different cities in distant poles of the UE in many terms have been chosen to set the project outcomes, in order to diversify the assessment of the results.

4.1.1 Valencia Citizen Hub

The goal of the Save the Homes project is to stimulate home renovation rate in the city of Valencia, aiming at improving living standards and general wellbeing, in order to serve as an example and make use of its replicability in the Valencia region in general. For the homeowner, that means providing a frictionless access to an energy efficient, accessible and comfortable home whilst for contractors and financing entities, a candid project pipeline shall be achieved.

To achieve this goal the concept of the Citizen Hub has been carried out. The one-stop-shop concept centralizes the renovation services provided to homeowners and is fully endorsed by the municipality of Valencia and supported by the regional Government for the rest of the municipalities of the program. The Citizen Hub facilitates the renovation processes, making it easier, faster and more affordable to homeowners to carry out renovation projects.

The Comunitat Valenciana (Valencia Region) is a region of Spain. With more than 5 million inhabitants, it is the fourth most populous region in the country, and its capital city, Valencia, is the third largest city and metropolitan area in Spain. It is located along the Mediterranean coast on the east side of the Iberian Peninsula.

The geographical scope for this pilot experience will be local at first instance, and then regional, as a replication phase). Therefore, cities involved are the City of Valencia (815,440 inhabitants) as frontrunner and partner of the project, and the follower cities in the region: City of Elche (230,000 inhabitants), City of Gandía (74,000), Municipality of Onda (12,000 inhabitants) and City of Alcoi (59,000 inhabitants), supported by the Regional Government (all of them signed project Letters of Support).

The Valencian OSS service provider presents a combination of three project partners: VCE, IVE and VRCP. Thus, Citizen Hub will be facilitated through the network of VCE (an entity promoted by the City Council of Valencia) providing the service for the city of Valencia; IVE supports the network of OSS offices through knowledge, expertise and tools for deep renovation; and VRCP acts as the main contact point with individual owners in Multifamily Homes (MFH). Furthermore, Valencian Government of Housing and Bioclimatic Architecture (LoS), supported by IVE, will be promoted the establishment of OSS offices along the region.

4.1.2 Rotterdam Citizen Hub

The municipality of Rotterdam is the second largest municipality of The Netherlands (320.000 homes), and part of the larger Metropole Region Rotterdam The Hague (MRDH) (over 1 million homes). Also on the level of sustainability Rotterdam is a front runner. Rotterdam is a member of the Resilient Cities network where cities that are committed to building and investing in urban resilience come together. Within this network a broad range of solutions is regarded.

The last couple of years several initiatives were started in Rotterdam, mainly started as a cooperative association. These initiatives are bottom up and use the enthusiasm of volunteers. There are five initiatives active as of this moment, including Alex Energie. These five initiatives do not cover the whole of Rotterdam. There is an umbrella organisation in place called Energie van Rotterdam (Energie van Rotterdam - Duurzame energie in je eigen wijk). This is a platform for energy cooperatives in Rotterdam, supported by the municipality at its start. For collaboration, scaling up and greater social impact. Together they aim for maximum ownership for all Rotterdammers in the energy transition. The platform started with Alex Energie, Blijstroom, Delfshaven Energie Coöperatie, Wijkbedrijf De Middellander and Energie Coöperatie Rozenburg. At least two more energy cooperatives are being formed: Zon op Zuid, Stadsdriehoek energie.

Alex Energie, as subcontractor of the Save the Homes program, is the obvious party to fill in the role of the HUB Alexander. They are connected to the area, they have ambitions to contribute to the energy transition and climate issues, and they have people that can, and are willing to act. Therefore, since 2021 municipality of Rotterdam, BouwhulpGroep and Alex Energie are working together closely in a local steering group towards strategies for solutions.

4.2 The 5-steps process

This section describes the steps followed for the implementation of the Citizen Hub based on the framework developed in the StH project. This implementation work plan served as a supportive guideline entailing important measures and specificities along the process, and is the base for assessing the achievement, lessons learnt, and bottlenecks faced by the Valencia implementation.

4.2.1 Market segmentation – supply and demand sides

Mapping the current situation at different levels is as a pre-requisite to understand the demand and supply at the different scales: local, regional, national and European level. In this context, the whole ecosystem of key stakeholders needs to be investigated:

- The demand side mapping and segmentation covers both, buildings and the building's owners. Surveys and inquiries can be done to understand the building owners' profiles (household size, age, background, education, literacy, etc.) in order to understand their needs and opportunities for engagement campaigns and several buyer's persona will be created.
- The buildings segmentation allows to understand better which neighbourhoods should be renovated first (buildings typologies). Buildings aggregation schemes for the cities will be proposed. Aggregation of dwelling or buildings of similar characteristics and/or in a delimited area will be done with strength to get better understanding and conditions for all later renovation process steps.
- In order to achieve the supply mapping and segmentation, the first step is to define the supply stakeholders that should be negotiated to channel their offer through the office.

A. The Overall Strategy

For all three ecosystem corners, the same strategy in order to get to know the context is followed: for each (actor: demand, buildings, supply), a segmentation, based on prominent characteristics is done, in both qualitative and quantitative terms, in order to allow for valuing relevance and prioritization. Then, on the selected segments, the behaviour, needs and expectations are analysed in order to find an opportunity to trigger the renovation process or the use of the citizen hub.

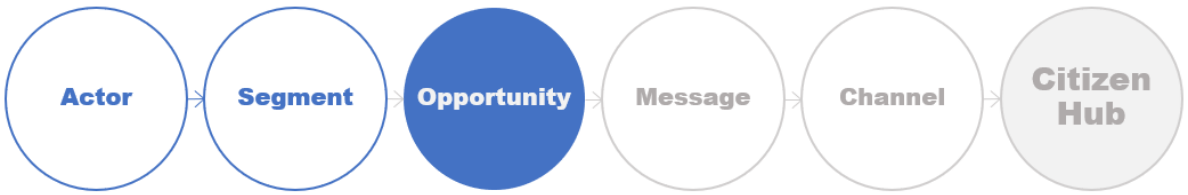


Figure 5.- Market segmentation - the overall strategy

B. The top-down approach

Top-down and bottom-up are both strategies of information processing and knowledge ordering, used in a variety of fields including software, humanistic and scientific theories, and management and organization.

A top-down approach (also known as stepwise design and stepwise refinement and in some cases used as a synonym of decomposition) is essentially the breaking down of a system to gain insight into its compositional sub-systems. In a top-down approach an overview of the system is formulated, specifying, but not detailing, any first-level subsystems. Each subsystem is then refined in yet greater detail, sometimes in many additional subsystem levels, until the entire specification is reduced to base elements. Top-down approach starts with the big picture, then breaks down from there into smaller segments.

In our context, the use of official standardized massive statistical sources, filtered, grouped, ordered and located allows for detection of clusters, whose qualities and figures allows the selection of the potential targets, according to defined objectives (scope, quantity, area, potential solution, personal situation, investment needed, energy savings potential…)

Valencia pilot followed mainly this approach to target 50 years old multifamily buildings with a legal obligation and maintenance to do, where families with children live, organized under the coordination of a professional property administrator, and big enough to be attractive to capable renovation companies. This represents a large building stock to which apply a unique onboarding strategy with high **conversion** rate.

C. The bottom-up approach

A bottom-up approach is the piecing together of systems to give rise to more complex systems, thus making the original systems sub-systems of the emergent system. Bottom-up processing is a type of information processing based on incoming data from the environment to form a perception.

In a bottom-up approach the individual base elements of the system are first specified in great detail. What is the common ground to go further towards the 'top'. These elements are then linked together to form larger subsystems, which then in turn are linked, sometimes in many levels, until a complete top-level system is formed. This strategy often resembles a "seed planting" growth model, by which the beginnings are small and time consuming but eventually grow in complexity and completeness.

> Here, this is understood as a **participatory approach, through observation, workshops, questionnaires and surveys of a set of representatives** of the whole population (in statistical terms), so to extrapolate their conclusions to a greater scope accomplishing defined objectives.

Rotterdam pilot followed mainly this approach to get the most information possible from an already convinced community, in order to find out which parts of the process would be **extrapolated**. Getting a support base is easier this way, because it is organised on a local level. This approach aims at growing and spreading knowledge among the residents at a local level and at embedding commitment of residents for the mid- and long terms.

D. The opportunity

All the abovementioned strategy aim is to detect the context opportunity to base the Citizen Hub on, i.e., according to the Cambridge dictionary, the situation that makes it possible to do something that you want to do. It can be addressed to:

- Demand side – what would move citizens into renovation, based on the analysed characteristics – how can public sector facilitate it, which trigger do they have for the citizens to pull - which external impact behaviours like the Ukraine war, energy crisis.
- Supply side – why would they move their business into the energy renovation - which building stock characteristic or situation makes them attractive for suppliers to be interested in trying something on them.

> The opportunity is a **'secret weapon' to be exploited on the analysed market**, an existing situation, underexploited available resource, that pops-up once you have carefully looked at your context

These answers come easy if you look in detail on the data collected in previous activities, for it is crucial to know your context:

- Valencia pilot found the big number of available (and not spent) **subsidies** as its opportunity, so they could design application requirements in order to target specific building stock and create the need for energy renovation
- Rotterdam found the **repetition** of building components in Dutch building stock as its opportunity to facilitate the implementation of a proven energy efficient solution and organising collectives around this repetition, to come to replication.

On the other hand, we should forget that all magic comes with a price, and opportunities come with challenges, which we also have to detect and prepare to overcome:

- Valencia guide citizens into solutions
- Rotterdam train workforce, attract workforce to work for private homeowners.

4.2.2 Demand side focus

The demand side aggregation helps understanding who the customers are, their pain points and motivational drivers for the renovation. In this context, to create campaign strategies that will resonate with people and increase their awareness on importance and benefits of renovations is key for renovation process onboarding stages.

E. The Communication strategy

This step focuses on the ecosystems' demand defined as a set of personas with their previously related opportunities. From these motivations, we should design the best fit messages and channels, and around them, the roles of the different stakeholders, according to different communication strategies, and in line with marketing and training materials, so the OSS delivers an integral service.

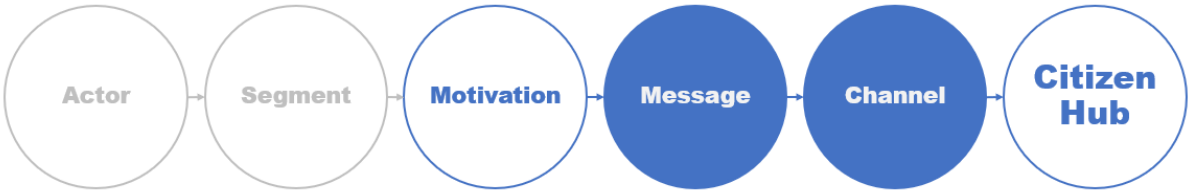


Figure 6.- The communication strategy

F. The motivation

When carrying out an energy renovation, previous experience has shown that the specific needs of citizens can differ substantially from what might be expected. Therefore, one of the first actions to undertake is to establish an accurate diagnosis of the motivations (beating the barriers) of homeowners and occupants. This starts with the analysis of the mapped demand in the previous section, to which we have to link the main motivations identified for undertaking home retrofitting activities usually are financial (value, savings…), social (status…), personal (lifestyle, functional needs…), or environmental (carbon emissions…)

> Motivations have to overcome barriers, and to do so, we need to **orient the messages so to guide demand interests into OSS context opportunity, and deliver it through the channels consumed by them**, so to ensure we reach our audience.

We might understand this better by looking at our examples:

- Valencia pilot joined the families in old multifamily buildings motivation (only necessary -cheap-maintenance) with the regional government opportunity (available energy efficiency subsidies – and unaccomplished legal obligations), orienting the message: **"including energy renovation, maintenance renovation is cheaper"**, and set a massive communication campaign based on explaining the existing obligations and the new easier, faster, better assisted process, and most importantly, the examples of specific renovation works and the **simulation tool** to compare your building maintenance budget with the same renovation but adding energy savings measures budget
- In Rotterdam Alex Energie is the local entity that provides information and organises meetings. The **specific information** for that area can be given. The First pilot was initiated by an active home-owner who enthused his neighbours. These examples can be exploited as a **first success**. The use of Ikwoon as a **digital way** to show people the advantages on three levels (cost, sustainability and comfort) so they can actual see what their possibilities are. This allows for a larger target group than a street.

G. The Marketing materials

With content (**message**), material for several steps of the case specific elaborated customer journeys is prepared, depending on the needs of the one stop shop. Possibilities are for example:

- Posters/ banners (corporate image for eventual actions);
- Infographics (explaining renovation measures, checklists etc.);
- Stickers/ badges/ cards (summarizing renovation (fun)facts, e.g. turning the assumptions about renovations around into "did you know…" stickers);
- Renovation magazine/ brochure/ flyer (with all information bundled, to have a good read and understand the whole process better);
- Articles or videos (showing the user stories)

> Once **the communication strategy foundation is laid and enriched with relevant elaborated information**, this serves as input for the marketing material for the engagement campaigns. These materials need to resonate with the different targets motivations and clearly deliver the message.

Our pilots followed different paths:

- For Valencia bigger awareness campaigns, based on the customer journey and knowledge of the target group were developed, such as videos with benefits of energy renovation according to neighbours who already went through the process, solutions factsheets or funding options brochures, for both public and private opportunities, available for download, or mass media materials such as urban furniture; but also more personalized materials such as appointment letters for users 'forced' to an intervention (according to mandatory assessment for old buildings) to drive them into the energy renovation path with a pre-designed solution showcasing clearly the benefits.
- For Rotterdam they first focused on the renovations that were taking place, collecting stories and getting more insights in that customer journey and the needs/ experiences. Because the targeted area is smaller than a region (Prins Alexander is ~15.000 homes) information can be more locally orientated. The next step is to reach out on a larger scale, but this can only be done when labour can be guaranteed to fulfil the last step (execution). If this cannot be **guaranteed**, all effort of organizing awareness campaigns, physical or digital, would go to waste, and even scare people of for actions in the future.

H. The Community

According to Oxford Languages, a community is a group of people living in the same place or having a particular characteristic in common. They may share a sense of place situated in a given geographical area or in virtual space through communication platforms.

> Our aim is to create and/or grow the energy renovation community around or through the Citizen Hub services. To do so, the communication strategy has to make use of the identified messages and deliver them through the **proper channels, so to exploit the community virtual space through communication**.

For distributing and exploiting marketing material, local and well-known existing **places and channels** are to be identified. Several possibilities to be used are:

- Websites; Like the One Stop Shop websites, dedicated landing pages
- Social media channels; (Like Linkedin, Twitter, Instagram etc)
- Events, trainings and workshops, in OSS premises and homeowners' places (squares, markets, fairs…)

- Having conversations and offer information at the one stop shop itself
- Personalized letters/ appointments offering solutions adapted to their building situation and possibilities.

To drive engagement campaigns activities into a "sense of community", we can look at its already identified elements: membership (e.g., participation in activities Citizen Hub rewarded by knowledge - interesting newsletters); influence (e.g., bringing your own experiences or concerns to help or be helped by other members); reinforcement (e.g., being asked to share or participate to new activities, being asked for their satisfaction); and shared emotional connection (e.g., recognition of collective achievements).

Based on all the above mentioned and according to each pilot context, onboarding and evaluation activities and channels were:

- For Valencia, being the Citizen Hub orbit defined by some tools (appointment & follow-up, training, diagnosis…), services (technical assistance, contracting assistance, funding assistance…), allies (local & regional government, business & professional associations, financial entities…) and resources (DBs, grant schemes…), their exploitation was capital for the deployment of the recruitment campaigns, which started a community around the physical premises of the OSS (for meeting, sharing and discussing, such as the **Citizens School**), the presence and explanation of the Citizen Hub services in **social media** and its reliable content, or the **virtual channels** for problem solving, participation and news feed.
- In Rotterdam Alex Energy is an actual community, because any person living in Prins Alexander can become a member. For example people's home can be visited and when people become a member they will get the advice. Membership is not that high (€1,- /month) but it gives them an actual sense of a community. When part of this community, all measures will be regarded as trustworthy and all activities (for example collective purchase of solar panels) are also regarded as part of the community. The threshold to participate will become lower.

4.2.3 Supply side focus

Supply side aggregation is fundamental to provide optimal offer, improve trust and awareness of homeowners, reduce renovation costs and time, and mainstream innovative technical solutions adapted to the local context, allowing for regional replicability and business risks reduction. The supply side means everyone who can be a single-point of contact in a one-stop-shop solution like manufacturers, service providers, contractors, architects, engineers, energy consultants, government etc.

I. The collaboration strategy

Supply side focus starts from the pilot cities ecosystem of suppliers' definition of a set of profiles with their capacities and services' sector or sub-sector. Then, the drivers, messages and channels (clustering associations) to be fit with them, so the network of stakeholders is created under different collaboration strategies, and in line with the training and validation programs and operational tools, so the OSS delivers trustable and qualified services.

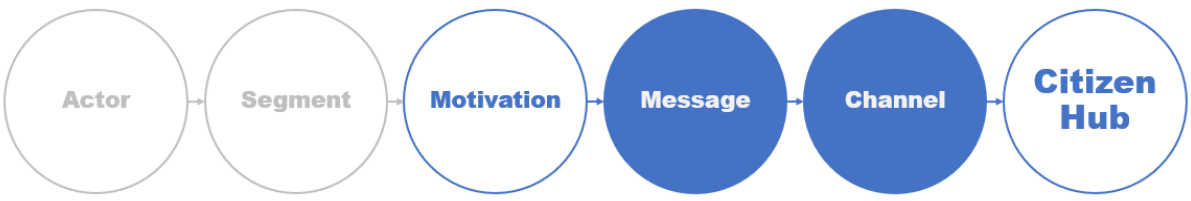


Figure 7.- The collaboration strategy

This can be done under different points of view, according to:

- the object of the service provided, which counts for bigger impact
- the subject providing the service, which counts for quality realization
- the role they play, which counts for smooth process

J. The motivations

One key point on the supply side in the European renovation sector, is being heavily dominated by SMEs actors with identified skills shortage, dominated by a craftsman-based approach, with little interest and capacity to undertake deep renovation.

> Motivations have to overcome barriers, and to do so, we need to **orient the messages so to orient supply capacities within the OSS context opportunity, then deliver it through known channels**, so to ensure their participation.

According to the subject providing the service (i.e., business size by number of employees or turnover, age or qualification of the employees), clustering common capacities should highlight their disposition to engage with the OSS collaboration strategies and use its mechanisms as a channel to get to potential clients. Popular strategies are **validation & training programs** or triage/offering/**comparing tools** easing the clients decision-making process, so to increase trust while mainstreaming innovative technical solutions.

We might understand this better by looking at our examples:

- Valencia pilot went for the secure, better, more work motivation for pulled the informal, professional freelance and SME profiles, and bigger construction companies not so much dedicated to renovation works, under the available subsidies' opportunity in the region: workforce was to be needed. The message was "**be prepared, be on the list!"**, and the professionals and business **associations** were aware of it to be the channels to drive supply side individuals to the official training, so to be capable and eligible to manage the subsidised renovation works. Also **field campaigns** in recurrent places such as DIY stores was sought to inform smaller parts of the supply side actors.
- In Rotterdam labour is difficult to organise. Larger contractors do not want to work for homeowners. Self-employed builders do most of the work, but they are not always working within a collaboration. Some extra steering is needed to coordinate the work of several self-employed partners (renovation coordinator). Because of the abundance of work, people are not doing as much training as they should do. This causes already problems, for example with certified installers of heat pumps. The building/technique sector is a booming business with lots of potential for work, but despite that people tend more to go for desk jobs rather than physical jobs.

K. The network

In terms of barriers to home energy renovation that directly affect supply-side actors, fragmentation has already been identified as one of the key ones, who makes the offer individually addressed to own products or services, far from an integral home renovation, and lack of interest in a good coordination.

> To build a services network is needed to ensure a smooth renovation process to all homeowners, being assisted by **the proper specialist on each stage of their journey, facilitated by the citizen hub**, and therefore backed up by it

According to the role they play on the renovation process (activity or part of the process solving), we need to build the whole customer journey, offering the appropriate service for each stage, according to the renovation works proposed (reducing renovation processes' costs and time). Popular strategies are **validated registries or forums** to solve problems and increase trust while mainstreaming innovative technical solutions.

Our pilots solved it as follows:

- Valencia pilot focused on the needed coordination of the renovation works in such a fragmented market, and thus used this as a requirement for applying to the subsidies, making mandatory the contracting (eligible cost) of a **renovation agent or manager** (who also was enabled to directly manage the grant) an official registry under responsible declaration was set, and then **a training program with validation exam** was in place to access a second **registry**, under the scope of the citizen Hub. Validated managers and agents were also connected through a **forum** so to solve doubts and share problems, supervised and advised by the Citizen Hub
- At this moment the market is not as far to be able to set up a list for renovation contractors or renovations agents by the municipality. Based on the principles of open government, it is much about supporting initiatives from bottom up, whether it is from citizens or from companies. But initiatives from companies are not common (yet). However, there is a need for renovation coordinator, not solely to manage the project, but also as a first point of contact and someone who can connect all the needed services (drawings, permits, but also work and materials) for the citizen.

L. The Packs

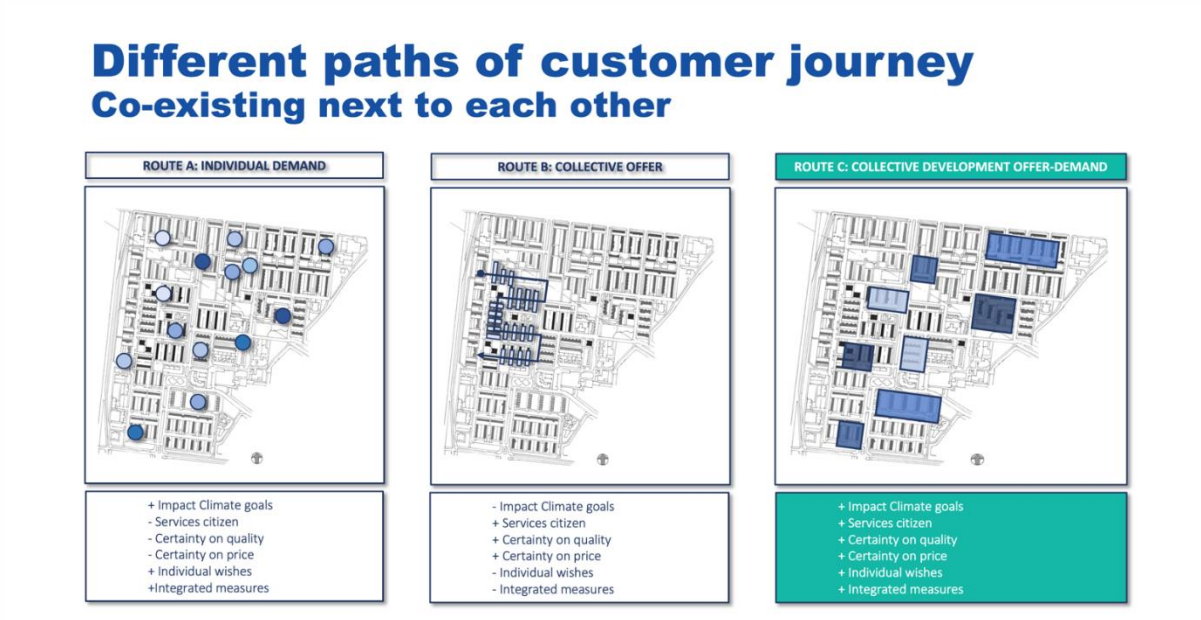
According to the **object** of the service provided (sector and subsector activities), targeting energy efficiency related solutions' providers has the objective of achieving the biggest savings possible.

> As part of the Citizen Hub services, energy retrofitting products and services are clustered to **reduce fragmentation of the renovation process and seek for the most efficient interventions** (higher benefits/ energy savings, with less cost/ disturbance) that demand wants to do and supply can offer.

To increase trust and ensure sufficient quality, these solutions are verified to assess their applicability, which can ease the decision making as also allows for a fair and reliable comparison between the solutions. The different suitable renovation packages (most energy efficient measures) are chosen to answer the needs of the building segments in the pilot cities and the identified buyer personas motivational drivers, including the basic estimation of price and savings.

Our pilots proceeded as follows:

- Valencia selected a multifamily building typology, and analysed their components and owners' needs together with the sectorial suppliers expectations: comfort (not only thermal), cost, disruption, duty, savings, were the triggers pulled and integrated into the subsidies requirements in terms of proposed renovation packages or itineraries, formed by **9 scenarios combining 4 measures** (external envelope insulation, change of windows, air-water heat pumps, and solar PV system) **according to different strategies** (do nothing, improve comfort-aesthetics, not disruption, reduce emissions, save energy, do it all – true believers), which could be assessed in terms of Cost (With and without Grant), Energy, CO2 and Comfort through the **simulation tool**, connected to the suppliers registry.
- In Rotterdam three routes can be discerned. Route A is a route that follows an **individual path.** Each citizen makes its own plan, and therefore has all freedom of choice. But he also has to do all the work by himself/herself. The impact can be rather high, it depends on his/her own ambitions. Route B is a **collective approach**, **but only on simple measures**, like purchasing PV panels, or organising a collective measure like cavity insulation. This way a lot of people can be reached, but the ambitions are low. The third route, route C, stands for **organising collectives**, and making small projects where citizens can choose their own **(higher) ambitions**, but still be part of a collective. That collective sets out the quotations to the market. This way more people can join and support each other, but alos the efforts from the HUB will be efficient.



4.2.4 The StH customer Journey

A customer journey framework has been created to get a complete overview of all the touchpoints during the renovation (demand, supply, onboarding etc) and to see how people go through decision making. The customer journey gives insight in the motivation and barriers of the citizens and how to assist the Citizen Hub can assist them better with the home renovation process.

The steps of the StH customer journey follow the decision-making process of the customer. The transition from one step to the next is crucial. The points of interaction between the customer and the company or brand are so-called 'touchpoints'. The touchpoints link directly to the experience of the customer in each step of the journey. Each step has its own drivers and barriers which show the reasons for the potential customer to continue or to quit the process.

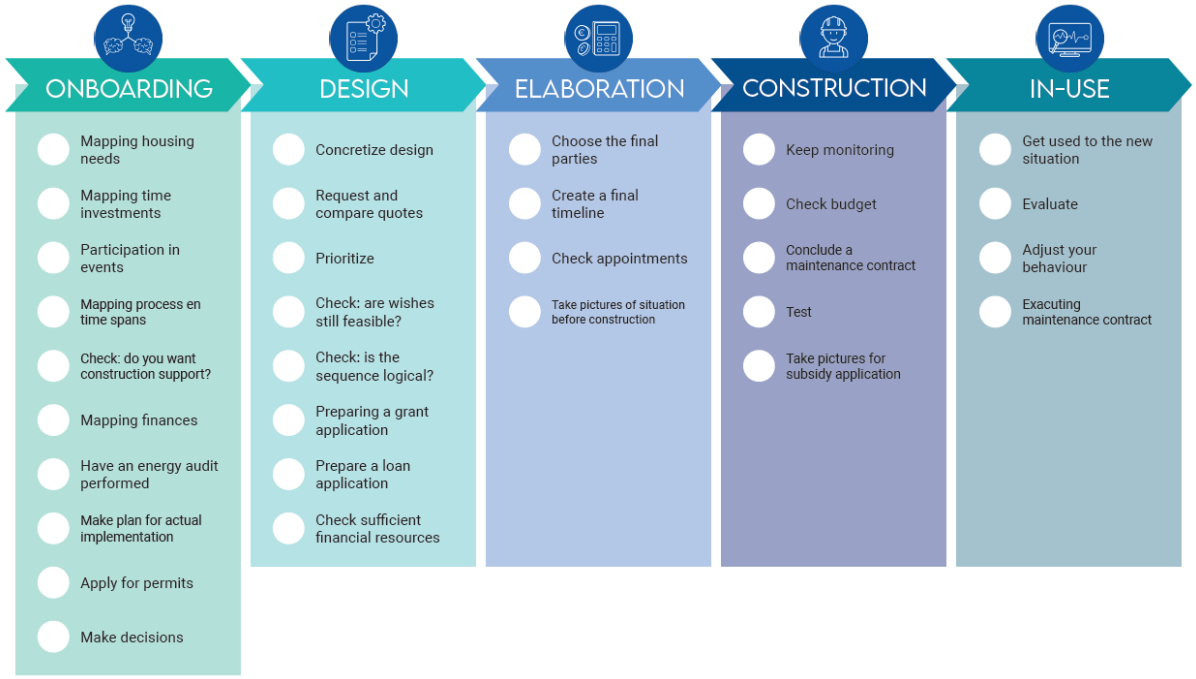


Figure 8.- The StH customer journey checklist

M. The assistance strategy

The five stops and their sub-steps have been defined based on existing journeys and one-stop shop concepts. These sub-steps represent the actions in the journey where the customer actively undertakes these actions or is actively involved in them. This forms the core of the customer journey framework.

- Knowing the target groups means knowing their needs and emotions which have been translated to possible **drivers that are linked to the relevant sub-steps** in the framework. The same has been done with the possible contact points, called touchpoints in the framework, between the customer and Save the Homes.
- Based on the barriers in the renovation industry and the barriers of the target groups, risks have been defined. These **risks are linked to the relevant sub-steps** in the framework. The mapping of the supply (and demand) side has been used to define the financial and renovation guidance needed in each sub-step, the guidance is also directly related to minimising the dropout risks.

> Each step of the customer journey aims to **offer support and information at the right time to smoothen the renovation process**, giving a clear insight into what interactions are foreseen between the citizens and Citizen Hub facilitators and what the actions for the Citizen Hubs are per phase of the journey

Each phase of the customer journey intends to ease the renovation process and makes the whole experience user-friendly and appealing. Each phase has its own goal where the overall aim is to drive decision-making and facilitate quicker renovation actions. So, for each stop (onboarding, design, elaboration, construction and use) the customer journey framework sets the objective based on needs & barriers, the main goals and the potential risks, so each citizen Hub can define its best touchpoints.

N. The services

The designed one-stop-shop concept should encourage citizens to undergo an energy renovation in their homes and buildings, by assisting them through the whole renovation journey, according to StH framework: onboarding - awareness, design - decision making, elaboration - formalization, construction - realization, in-use – validation phases.

> From the StH customer journey framework, the implementation strategy is designed for each context based on a combined top-down bottom-up approach, where **existing local needs are defined as sub-stops, and applicable local tools and services are matched within them**

This will highlight the existing gaps and therefore the needs for implementation in the study areas. Therefore, for each stop, we should set:

- Existing needs (sub-stops), defining touchpoints
- Existing resources (services, tools or activities) form involved partners, solving those touchpoints
- Gaps: new resources to develop or new partners to engage to complete the assistance.

In the case of our pilots' experiences:

- In Valencia there was the need for awareness of the problem, but most importantly, for the existing solutions, therefore, the services had to be **focused on the possibilities**, their availability, cost and individual benefits (beyond the global concept of getting a better world to live in) through **success stories, predefined solutions**. This results in services oriented to the first stages (dissemination), but also to other stages (personalization of predefined solutions or monitoring of results).

- Rotterdam previously had experiences with various types of **pop-up shops** (i.e. in Triple A /interreg2seas program: HOME (triple-a-interreg.eu)), although effective, the effort in relation to the outcome was low. Therefore, the aim shifted towards more **local orientated actions** in specific neighbourhoods. The focus lies mainly at looking for opportunities to use bottom-up initiatives and grow them to neighbourhood wide- activities. A part of the municipality of Rotterdam is aimed at **Services to Sustainable Initiatives**. They have to connect different initiatives on sustainability to each other.

O. The tools

Once the services are defined (stops and sub-stops, touchpoints, resources and gaps), they have to be put in place in a coordinated understandable way, making the customer journey smooth and easy to follow.

> The OSS tools are the different resources in place to solve each service. They can be physical or virtual, manual or automatic, existing or newly developed, but above all, they have to help the customer understand and decide in each of their journey steps.

For doing so, it is very useful to:

- analyse the existing resources in place in your context, who is responsible for them, their scope and target
- design the new resources according to the existing ones, in terms of inputs and outputs and interlocutors, so to fill the gaps, sew the whole path and smooth the process

One mandatory resource to be put in place is the physical office. This step has to be aligned with the local proposal and its reality. It is of great importance the decision as to where the office should be located. It should preferably be positioned in a strategic location that will increase the likelihood of success and draw more attention from residents. Also, setting up an office entails the procurement of several goods, including industry-specific equipment, furniture, tools, and vehicles suited for the specific project, followed by contracting of all necessary services such as: Wi-Fi, phone network, water, electricity, etc.

In the case of our pilots' experiences:

- Valencia used the existing awareness activities developed by the already set Energy Office and their close personal involvement with their neighbours and developed an **online tool for easy, quick diagnosis** of buildings, so they could know their potential energy savings, improved comfort, cost and subsidies applied. This, linked to a **repository of validated professionals and contractors**. On the other hand, the problems with collective decisions, usually solved by the role of the property administrator, were oriented to energy efficient solutions by implementing a **training course** for this profile, usually more legally, administrative oriented. And finally, problems arising during renovation works were supported by **neutral meeting spaces**, were stakeholders and citizens can share experiences. Also, undertaken analysis of the context lead the Energy Office to open **2 new physical** offices in other Valencia neighbourhoods.
- Rotterdam uses the **presence** of a local organisation, Alex Energie. They do not have physical offices but can use municipal buildings for community meetings. Alex Energie is supported by the municipality and, as an example, members are for example **trained** to use heat cameras to advise people. The advantage of a local based entity is that there are always members nearby, who can explain things. The 'buurmensen' are actual neighbours who tell you the possibilities. However, their knowledge is sometimes limited and need to be supported by professionals, especially when ambitions rise.

P. The staff

Being previous sections set, next task consists of designing and implementing the training programme needed to realize the designed Citizen Hub model within each specific context, where the different objectives, target groups, requirements, modalities, evaluation and certification will be defined, together with the courses, resources and skills to be gained in order to offer an excellent customer service. The ability of the business to source new personnel, maintain the organization operational, and improve the quality of the human capital employed is key.

> Training program for each Citizen Hub **staff must cover the whole services** provided by it, including the context, regulations and tools available to solve citizens problems, and the skills to help them understand and implement the potential solutions

This means to start with the defined functionalities to be provided and related needs for staff training on each stop:

- Stop 0 – onboarding: Key activity is interaction, and soft skills are therefore the core of this stop for staff training
- Stop 1 – evaluation: Key activity is assisting on the resources and tools available and their results meaning, and therefore some technical knowledge is needed.
- Stop 2 – elaboration: One of the key activities is decision making support, and therefore need to be perfectly aware of the local context and framework for renovation process.
- Stop 3 – realization: One of the key activities is to get the user understand where they are and what they need or should expect, therefore accompanying and clearly know about the renovation journey.
- Stop 4 – validation: Key activity is assisting on the resources and tools available and their results meaning, and therefore some technical knowledge is needed.

According to this, skills needs were distributed in several learning modules, which can be addressed to the whole Citizen Hub as a service provider team or to specific profiles within the team:

- Module 1: Context and framework: Background knowledge of the local context, legislation applying, subsidies and grants availability, competences, etc…
- Module 2: Customer journey stages and functionalities – general: Theoretical knowledge of the whole services' menu, touchpoints, dependencies, etc…
- Module 3: Tools and services – Technical: specific materials for supporting tools used within the customer journey stops
- Module 4: Soft skills: Communication skills and basic customer service skills

Then, offers available have to be analysed, finding the needs for adaptation or customization of contents, so to prepare a program proposal, including timelines and profiles. Contents of each Module is defined in terms of knowledge to be gained, and resources, materials or tools facilitating that knowledge acquisition. Once the modules are defined, a Training Program is designed according to terms below:

- OBJECTIVES & TARGET GROUPS
- REQUIREMENTS
- MODALITIES & PLANNING
- EVALUATION & CERTIFICATES
- NECESSARY RESOURCES (inc. FINANCIAL & HUMAN)

In the case of our pilots' experiences:

- In Valencia the focus was in one hand the **staff** to be present at the Citizen Hub offices, for whom a training program was set with **mandatory credits and discussion and problem solving forums**, and on the other hand, the **property administrators** training, since they have a main role on the collective decisions in condominiums, but usually have a legal background, so their **technical training** was capital to translate the energy renovation opportunities to the condominium owners, acting this way a satellite Citizen Hubs officers.
- Rotterdam does not have a staff. The only paid people are people from the municipality, but they do not actual work in the area and the task to oversee challenges in the pilot and in the collaboration within Save the Homes project and to advise Alex Energie in their doing. Alex Energie is the local anchor point, but they are a **voluntary based organisation**. They get some funding, but not to hire (fulltime) expertise. This forms a difficulty, namely that it still is an organisation operated by volunteers. Despite all individual knowledge and enthusiasm that people have, it does no **guarantee the quality of** the organisation. It depends also on the maturity level of the organisation, which grows together with experience, a well-structured organisation and the size of its local network. Alex Energie is a relatively young organisation. That is a bigger risk when organising things bottom up. During the execution of the pilot, it is clear that Alex Energie was mainly seen as a trustable party for homeowners which has the tasks to defend their interests. The difficulty for Alex Energie is then to act consequently to hold that trust. During the pilot, professional expertise was brought in by BouwhulpGroep.

4.2.5 The follow-up

Finally, not only the service has to be designed, but the way of ensuring continuation on the mid-long term, measuring success and implementing improvements where needed.

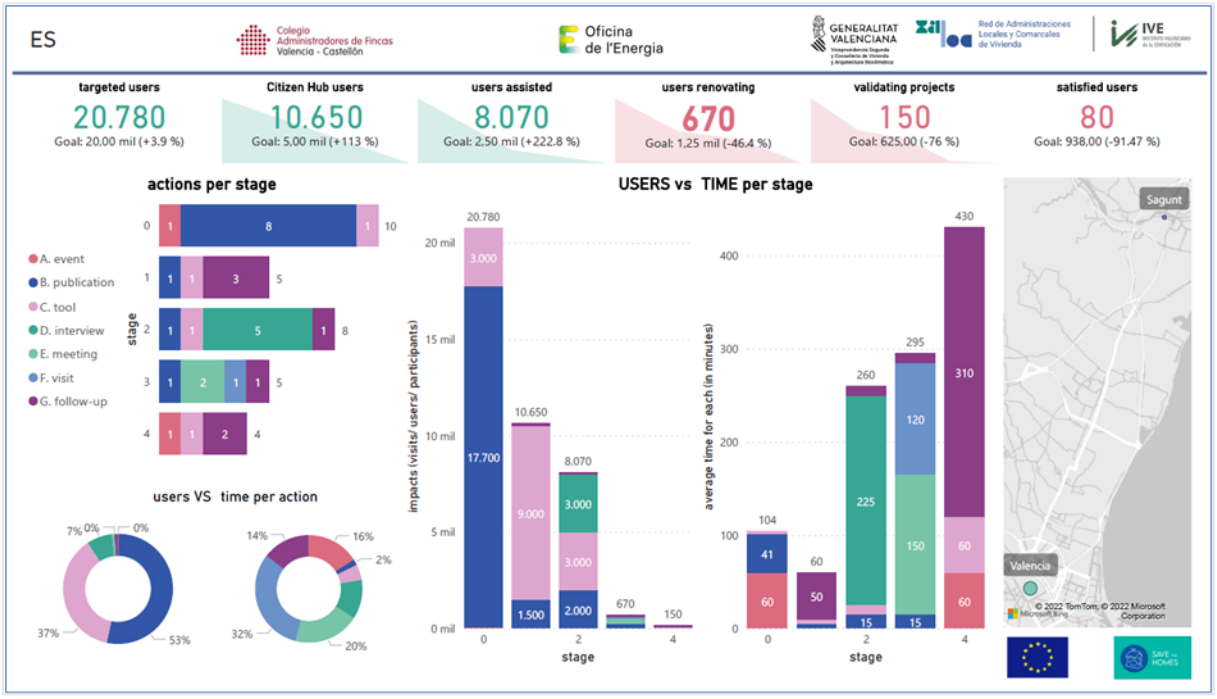
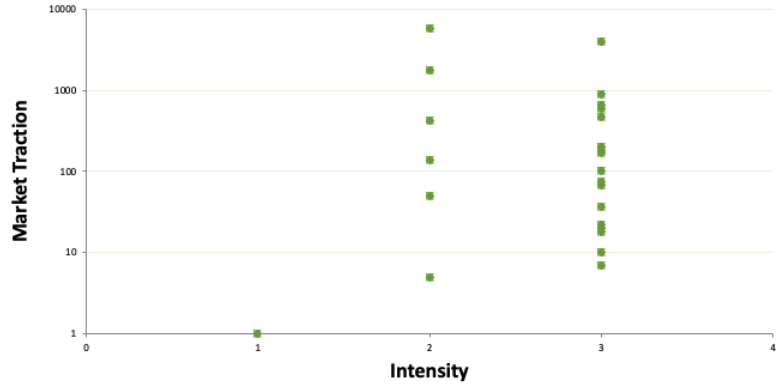


Figure 9.- Customer journey monitoring dashboard

Q. The sustainability strategy

The goal is to identify the strategy to set a self-sustainable model for home energy renovations. To decide each city model, examples of other experiences have to be taken into account and special demands and intrinsic characteristics of each city have to be considered to foster the economic viability and success of the proposed models.



64 programs were sorted by legal status, target market, country of operation, number of completed projects, as well as operational approach. The operational approach can be two-sided:

- A low-touch approach is characterized by several entities with low levels of cooperation and provided services.
- A high-touch approach is a complete home renovation program managed by one entity that provides all the necessary services.

Based on the data gathered, programs were rated on a scale from low-touch to high-touch to pinpoint their engagement level. Ratings were assigned according to the following guidelines:

1. A program only provides financing, or if it only offers technical advice in combination with subsidy info (and no contracting or financing). These only offer a single or a couple of services to homeowners, which may help to initiate the renovation process but does not facilitate it entirely.
2. Advice, contracting, and subsidies are provided (with no mention of financing); if advice and contracting are offered (no subsidies or financing); or if the OSS provides advice and financing (no contractor relations and/or subsidies). This type of OSS is a medium touch or medium intensity program as it provides homeowners with several resources that may be needed when renovating but lacks some elements to fully support renovation works.
3. Advice, contracting, and financing is provided (which may or may not include subsidies). This type of OSS is an all-encompassing integrated home renovation platform that offers all of the services potentially needed by homeowners when renovating their properties.

OSS programs providing home renovation services including technical advice and support, contractor relations, subsidies and financing stand out. These programs have a strong element of differentiation and have a competitive advantage as most of these programs yield the largest numbers of completed projects.

R. The business models

A self-sustaining business model is fundamental to continue the project beyond the established funding horizon. In order to determine how the One-Stop-Shop (OSS) can be self-sufficient, a specific business model is necessary.

> One way to build up a business model in an efficient way is by using the Business Model Canvas (BMC) framework, which aims to describe the rationale of **how an organization creates, delivers, and captures value**.

In concrete, the BMC framework address the following points:

- Value creation which describes how value is created and the sources for this.
- Value delivery which describes how this created value is delivered to the customers.
- Capture of value which describes how the organization generates revenue and profit.

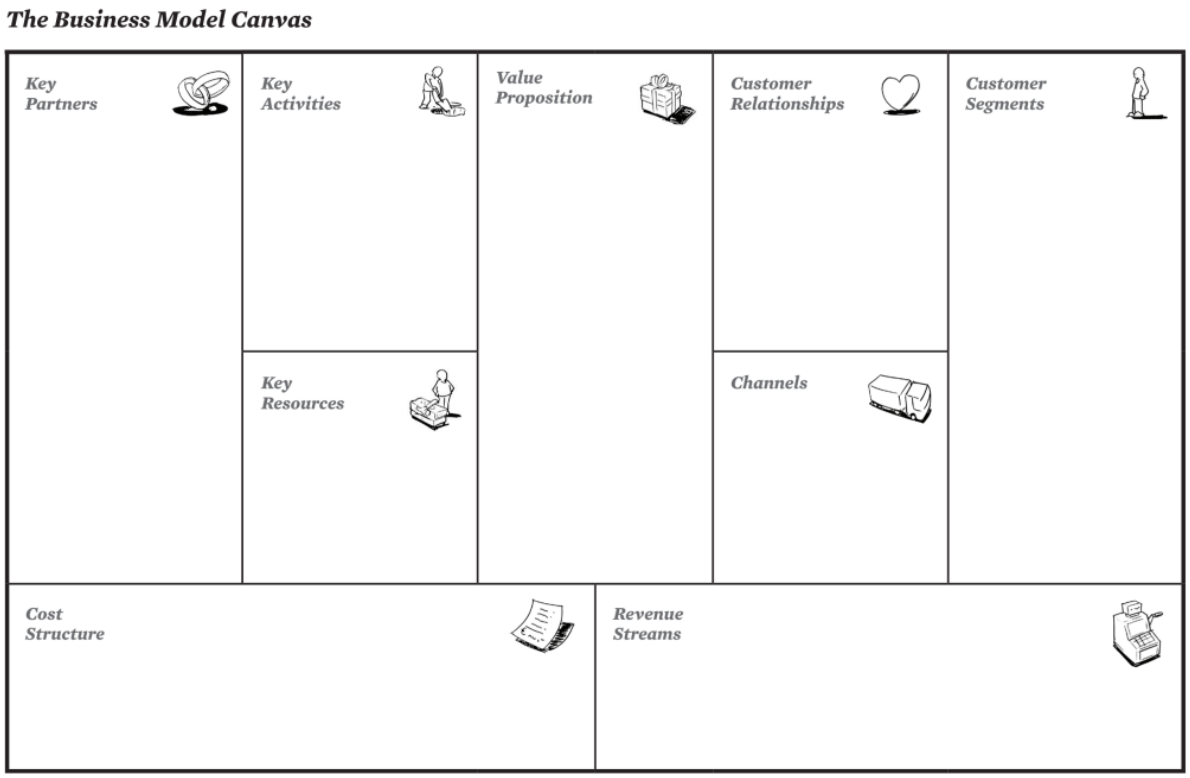


Figure 10.- Business model canvas

Finally, the business model definition addresses the economic model of income and expenditure as part of the financial model set-up of the office. During the business model definition phase, the main challenge regards the definition of a solid revenue model that can guarantee the economic sustainability of the Citizen Hub on the long term. Being a key aspect of the Citizen Hub design and set-up, long-term financial feasibility needs to be contemplated, exploring the different options of monetization available and best suited for each Citizen Hub's needs.

- For the Valencian pilot city, the recently launched Next Generation EU Funds will be implemented to the business model to better target the project development. The subsidies entailed in the funds are supposed to trigger the demand, stimulate market actors and implement a set of networks of OSSs across a target region or location.
- For the Rotterdam pilot case, which counts with Alex Energie as the spearhead of the project, the Hub will leverage on strategic partnerships in the short term to cater for the HOs demands in the best way possible. Additionally, the business model must address the adaptations needed for the transition from a volunteer basis to a professionalized one, which is fundamental for the upscaling of the StH project. Upscaling towards other neighbourhoods should be possible by using other energy collectives in the city and building up on possible collaboration within projects in different parts of the city, initiated by the municipality.

S. The risk assessment

The objective for the risk assessment task is to set all the OSS stops activities and its time spans, definition of the specific milestones, potential risks and contingency plans, specific criteria, preliminary indicator conditions for the evaluation and monitoring processes carried out during planning and deployment of the citizen Hub concept.

The objective is to detect in advance any risk related to the Citizen Hub activities so to **be prepared to act just on time** and correct any deviation in time when/if this arises.

Each Citizen Hub will coordinate this work plan with relevant key stakeholders that are involved in the construction process to monitor and oversee the activities in an efficient way. This can include a programme to train blue-collars in systematic quality control procedures during the renovation process.

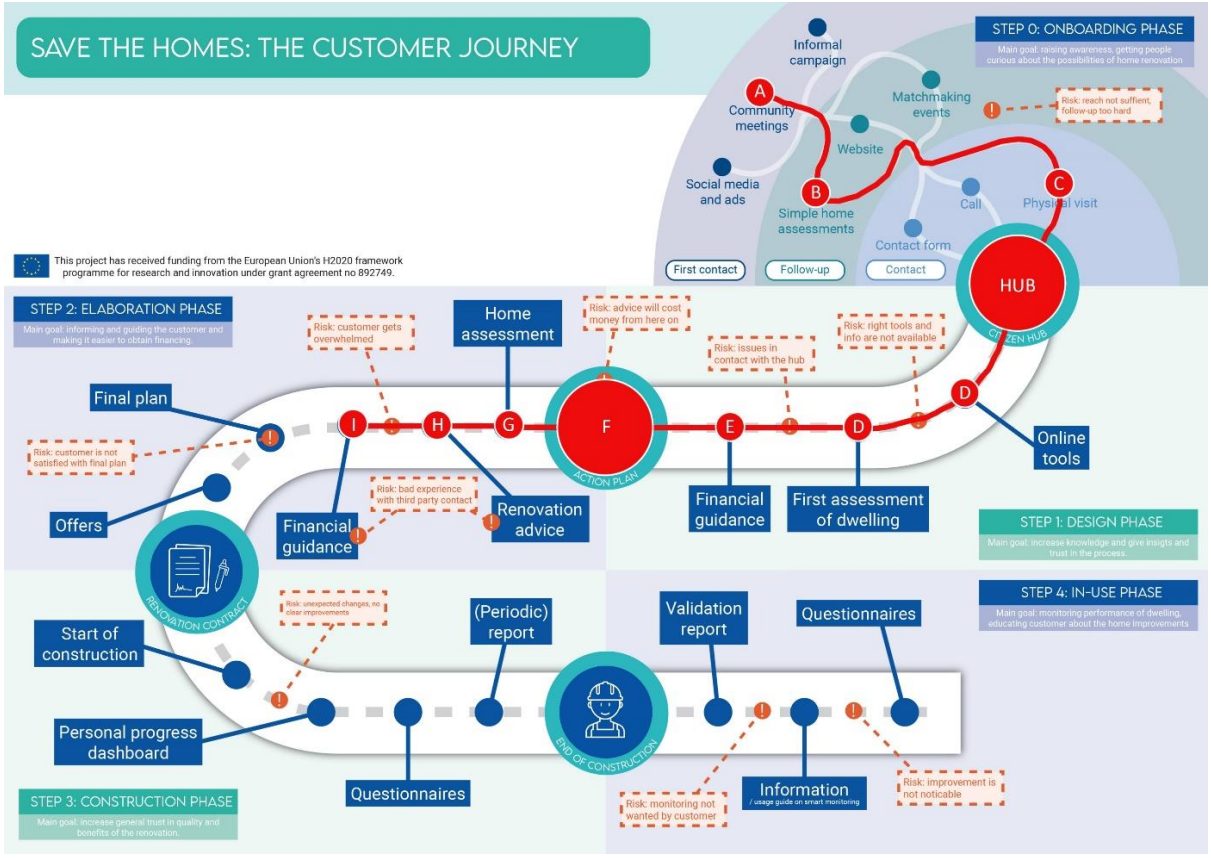


Figure 11.- Quality & Risk assessment

So, for each stop and sub-stop previewed, we need to define:

- The main activity deployed, or service offered
- The roles and actors implementing them
- The delivered quality sought
- The risks related
- The way to detect/ measure them
- The potential solutions/ correction measures

In the case of our pilots' experiences:

- For the Valencia pilot city, the main risks detected were three and different solutions and tools were developed to solve and correct them:
  - **Lack of interest/awareness in energy renovation**. It was solved developing broad awareness campaigns; a website with information about the renovation process and the available subsidies; setting a pop-up mobile energy office to bring information to popular sites; creating the Citizen's school for energy renovation where people share their experiences; and developing the "best practices" map where real energy renovation experiences are shared.
  - **Citizens getting overwhelmed about whole renovation process**. An online tool for easy, quick diagnosis of buildings, so citizens can know their potential energy savings, improved comfort, costs, and subsidies applied; personal appointments; a tool is used to analyse the

compatibilities of the different subsidies' options; and the staff from the energy offices provides advice about comparing the offers from different contractors.

- **Lack of trust in skilled professionals and contractors**. A repository of validated professionals and contractors is provided to the citizens¸ the staff of the energy offices is available during the renovation works as mediation and to solve doubts; and the Citizen's school for energy renovation provides real experiences from other citizens.

- Rotterdam has several risks. See also D4.5 (Action plan, risk assessment and quality assurance of the renovation activities) where each individual step is evaluated and assessed. But looking at the whole project, these four can be distinguished:
  - **Lack of interest / Difficulty to reach all people**. Sustainable renovation will take time. However the whole city needs to be renovated before 2050. So it is not just for the frontrunners, but all people should be aware of the task ahead. For now people are willing and interested, but that is just a small percentage of all citizens. This is not something that can be changed by Alex Energy or the municipality on its own. It is a bigger problem that needs attention form the National government and the EU.
  - **Business case.** People do not like to pay for the first two stages of the customer journey. They see the informing part as a task of the government or the market. So any advice up until that moment, they are not willing to pay for. Later in the process, when the advice is specifically direct to their home they are willing to pay a certain amount for advice and coordination to come to a plan. This means that there will be no self-containing business case for the first two step, and additional money will be needed, either from the municipality, the region or national government. The market is not going to pick up that tab.
  - **Lack of available workforce**. The success of a One Stop Shop is measured in the actual outcome, how many homes have been renovated. In the current Customer Journey people get stuck at the elaboration phase, because getting a good quotation is difficult. And when a good quotation comes, it is most of the time not one party, but several self-employed contractors, so you need to do the build management by yourself (or hire someone). In a sound business model, the workforce should be in place and ready to execute as soon as a group of citizens has made their choice. This can be one contractor, or it still can be a collection of individuals, but individuals that work together during several projects, so they know each other's skills. Because this is not the case and finding people to execute the work is hard, the first two steps (onboarding and design) will not be started, for the fear that people drop out permanently.
  - **Lack of professional organisation.** Although Alex Energy is an enthusiastic group of people with skills, they lack continuity and money to fulfil the task that comes with upscaling. This accounts for the role of the volunteers, for example limited time, but also in support for Alex Energy. For example, there is no (good) CRM system to keep track of activities, but the organisation does not have the resources today for this. The same goes for equipment to conduct advice (like a heat camera).

T. The performance

The last task consists of developing the KPIs and monitoring system / plan.

The KPI Monitoring System should include details on the precise aspects of the Citizen Hub deployment, from the success rates of the project implementation, the satisfaction rate of the customers or homeowners, to the changes that have been necessary during the implementation of the project.

Specific KPIs should be defined for each of the following points:

- economic KPIs

- environmental KPIs
- social KPIs
- performance monitoring KPIs

covering all the tasks and sub-tasks performed by the Citizen Hub.

	Operational KPI	Monitoring ra	Data gatering method
Citizen hub sustainability	Costs	Monthly	Budget
	Operating margins	Monthly	Budget
	Number of public loans or subsidies mobilised	Monthly	Budget
Pipeline, support and execution of project	Number of events	Monthly	CRM
	Number of attendees at events	Monthly	CRM
	Number of new contacts by events	Monthly	CRM
	Monthly conversion rate by events	Monthly	CRM
	Number of dwellings included in the new contacts	Monthly	CRM
	Number of technical advice meetings	Monthly	CRM
	Monthly technical advice conversion rate	Monthly	CRM
	Number of dwellings included in the technical advice meetings	Monthly	CRM
	Number of financial advice meetings	Monthly	CRM
	Monthly financial advice conversion rate	Monthly	CRM
	Number of dwellings included in the financial advice meetings	Monthly	CRM
	Number of rehabilitation works	Monthly	CRM
	Monthly rehabilitation works conversion rate	Monthly	CRM
	Average time/user by phase of the customer journey	Monthly	CRM
	Type of interventions hired in the the construction phase	Monthly	Exit survey
	Positive reviews score	Monthly	Exit survey
Economic Impact	Investment triggered	Monthly	Proposal and Exit survey
	Jobs created	Monthly	Proposal and Exit survey
	Amount of public loans or subsidies mobilised	Monthly	Proposal and Exit survey
Environmental Impact	Monthly gwh/y saved	Monthly	Proposal and Exit survey
	Monthly tCO2eq/y saved	Monthly	Proposal and Exit survey
Social Impact	Health and air quality benefits reviews	Monthly	Exit survey
	Satisfaction survey at the end of each phase	Monthly	Exit survey
Contractors	Value of works done by contractor	Monthly	Survey
	Average number of contractors required by type of interventions	Monthly	Survey
	Contractor availability by type of interventions	Monthly	Survey

Figure 12.- Business model KPIs

To set up KPI and monitory system / plan, the main challenge that is usually encounter consist of difficulties on the collection of relevant data. This phase requires access to previous data and post-intervention data. Monitoring systems that facilitate this process are generally expensive and very technical to set up. But there are some simpler options such as:

- Looking for the key figures from the annual budgets
- Maintain an updated CRM (for example in a simple spreadsheet)
- Prepare a short, sharp survey for customer follow-up and/or satisfaction
- Connect all of them to a dashboard tool representing the defined KPIs

In the case of our pilots' experiences:

- In Valencia, the pilot has started to monitor some of these KPIs with the difficulty of territorial and administrative **fragmentation** of the developed initiatives, where Valencia energy Office already has a quite complete and useful CRM implemented as a spreadsheet with internal calculations, but XALOC offices do not have harmonized follow-up mechanisms for the moment; Budget was managed at office/ municipality level, and could include or not the XALOC agreement grant; Exit surveys were still under development; and Renovation proposals data come from the pre-diagnosis online tool (renoveu.five.es), thought the stored statistics and google analytics. So, in an attempt to **unify these data sources, a form addressed to the different actors in the data collection** chain is being implemented, so to centralize data and monitor global performance of initiatives related to the Save the Homes project activities, under a **unique dashboard**.
- Rotterdam…has no standard monitoring system as Alex Energie is actually in the lead of the activities of the hub. One of the lessons learned is that monitoring should be a mandatory part of setting rules with other parties to report back with monitoring KPI's. We know the results of single

actions, like a community meeting and the follow up on that meeting. But if these people are the same people who join other actions, or are members of Alex Energie is not known. This, is also a difficulty with a bottom up approach, activities that are common (or even mandatory) within a government or commercial structure like keeping track of hours and responsibility, are not always in place in other organisations. And when this will be implemented within a volunteer organisation, it can change the dynamic with the volunteers. 'Their' club will become an organisation which has to comply to specific rules. This means that at the moment getting KPI's is like balancing on a high rope; you need input to monitor the effect, but you cannot over-ask the volunteers. Most importantly home-owners who have participated in the actions have endured already weeks and months of efforts and nuisance in their direct environment and daily life. The question is wether they will accept themselves and their houses to be subject to monitoring. For Alex Energie, their main aim is to keep their relationship with home-owners intact.

4.3 Lessons learnt for transferability.

After setting all these steps in the Valencia and Rotterdam experiments, some lessons learnt are worth to mention in order to orient transferability of the process and be used as keystones for replication experiences:

- There is **plenty of data** sources stored in silos and not connected, uneven in format, granularity or up-to-date rate, so work here might not need to be as fine as foreseen at the beginning of the project, but more a high-level analysis process highlighting which could help detect and prioritize, on one hand, the quick-wins for the short term, for rapid consolidation; and the greater impact potential in the long term, for sustainability of the service, both based on the replicability and scalability of the solutions provided.
- There is plenty of research methodologies to approach the engagement and community building problem for the establishment and survival of a new brand or service, based on the target population or demand segment, but work here is not only interpreting the guidance of those theoretical methods, but to stablish the full ecosystem of the renovation process in terms of demand and walk through those **methods according to the local context**.
- For a **durable stakeholders' network settlement, is capital to build on recognizable familiar mechanisms** helping the introduction of the Citizen Hub renovation services' offer and aiming at upgrading their capacities, and to involve stakeholders representing targeted suppliers and experts in communicating innovations or offering collaboration deals to them.
- For demand and supply side **mapping and segmentation, leading to link the context opportunity to the demand and supply sides' motivations, the solutions design is quite straight forward**: targeted buildings point at the type of solutions more impacting in terms of energy efficiency; targeted population interests refine the kind of solutions more accepted; targeted suppliers make those solutions available; existing mechanisms in terms of regulations, training, bureaucracy or financing, drive the fine-tune of the deployment strategy of the selected solutions, which in turn can be combined into packs and offered with or without contractor or facilitator assigned, depending on the customer needs and the Hub network maturity.
- the StH customer journey framework has risen as a useful tool on top of which **set reusable existing resources and map the gaps and needs** for planning an implementation strategy
- Each (follower) city has its own existing dynamic. It is good to see what is already in place, and how it can be put to use. Whether it is an existing physical office, the existence of an energy collective or even willing contractors that can fullfill a task. But the most important part is that expectations between parties should be made open and transparant/explicit. Who fulfils what roles, its responsibilities, with which interests and where do you discuss about that course.

- The scale and the variety of approaches can vary per city. Only a chosen approach is implemented in the whole city and even in the region. That is the case of Valencia / Spain. Or various approaches are implemented in the city depending on the opportunies at a local level. That is the case of Rotterdam. The approach based on energie communities is one of them. In areas of the city where there are no bottom-up activities, the municipality initiates activities to promote energy renovation.
- Each city approach depends on the targeted groups: single or multifamily houses.

4.4 The Citizen Hub blueprint & implementation script

A Citizen Hub blueprint has been developed to easy the implementation of the Customer Journey and the OSS framework in the follower cities. The complete blueprint can be found in the **Annex 3** of this document. The idea of this material is to show in a single, printable document the whole process to implement an OSS. The document is divided in 5 tables, one per step from the 5-step process, and, within each step, the 20 sub-steps are shown. The column from the tables present and ask for the following information:

- **Sub-step**: It shows each one of the sub-steps of the implementation process from sub-step A to T.
- **Test materials (Deliverable):** Specific test materials useful for each sub-step and the deliverable where it was included and explained.
- **Question:** This section shows which question each sub-step tries to answer and solve.
- **How difficult is for you answering this question? (1-5):** This section asks for the follower's feedback about if it was easy or difficult to answer the previous question.
- **How useful are the test materials for you? (1-5):** This section asks for the follower's feedback about if the proposed test materials were useful for the follower cities.
- **Valencia:** In this section, a short answer to the corresponding question for the Valencia city pilot is presented.
- **Rotterdam:** In this section, a short answer to the corresponding question for the Rotterdam city pilot is presented.
- **How much do you relate to these experiences? (1-5):** This section asks for the follower's feedback about if they relate to the city pilots' experiences.
- **Your answers:** This section asks for the follower city's answer to the corresponding question.

5 Follower cities

According to Objective 4 (To deliver real benefits to citizens and other stakeholders in two cities as a result of the Citizen Hubs operating locally), the objective is not only to provide the integrated renovation services to the specific homeowners groups identified in the two pilot cities (Rotterdam and Valencia) but also to demonstrate the potential of the Citizen Hub concept to all relevant stakeholders in other municipalities, to regain trust and interest in building renovations and to further expand the Citizen Hub business model.

In this context, and in order to roll out the Citizen Hub concept on a wider scale (regional, national and European), the Citizen Hub models developed for Valencia (ES) and Rotterdam (NL) will be one-on-one assessed with the two follower cities, Sant Cugat (ES) and Ljubljana (SI).

Sant Cugat – ES

The objective is to test the replication in the same country for Spanish pilot in Valencia and follower city Sant Cugat. The aim is to analyse all the benefits of having the structure and services developed in national language and based on national circumstances, legislation, culture and habits.

Sant Cugat Municipality is assessing the methodology and feedback will be reported during WP4 and WP5 activities for pilot experiences and replication and exploitation activities.

Ljubljana – SI

The objective is to test the replication between EU countries where the Citizen Hub mapping methodology and results for the Dutch city of Rotterdam will be replicated for the City of Ljubljana in Slovenia. The aim is to validate the effectiveness of the replication process between the different EU countries.

The city of Ljubljana is assessing the methodology and feedback will be reported during WP4 and WP5 activities for pilot experiences and replication and exploitation activities.

Task 5.1 will deal with this two-fold realized replication process, which presents the main viability assessment and will prove how smooth the transfer and replication can be when replicated model in the same country (applying to the same regulations) or in between EU countries. A good collaboration between the pilot and follower cities is already established where the pilot cities (LPL) will remain responsible for sufficient transfer of knowledge, methodologies and tools from the previous WPs to the follower cities (LPL). The task will result in thorough analysis and qualitative assessment of achieved replication (and its bottlenecks) and plans for further exploitation activities. **They will follow this Citizen Hub blueprint and implementation script provided by the pilots** and followers feedback will be used to assess what works and what should further be improved. This iteration will give a final review and feedback to come to the replicable Citizen Hub model used in exploitation.

6 Conclusions

As indicated at the beginning of this Deliverable in the Executive Summary, the objective of this document is to establish a **protocol for the transferability of the Citizen Hub, based on the definition of the steps implemented in two pilot cities (Valencia, ES & Rotterdam, NL) and considering the results obtained.** As detailed throughout the document, and by way of compilation to give a graphical overview of the process at a glance**, the implementation of the Citizen Hub can be summarized in the following 5 steps and 20 sub-steps** (from **a)** to **t)**):

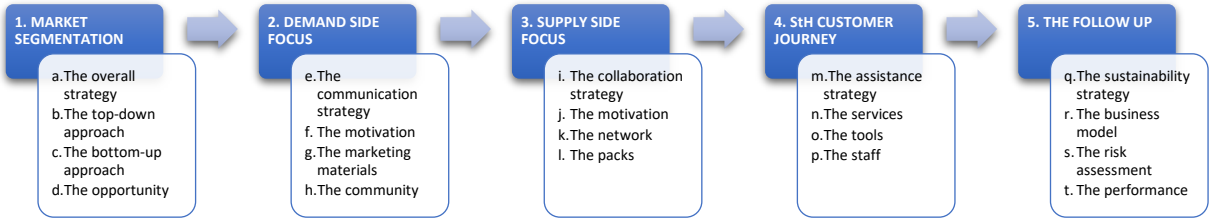


Figure 13.- The StH Customer Journey: overview of the implementation process

Some **highlights** to keep in mind in the different steps and throughout the process would be:

- Regarding **market segmentation – supply and demand sides**. Taking into account both the differences between the two pilot cities selected, and the consequent diverse approach adopted in each of them, the major difficulty in producing this protocol -taking advantage of the results obtained- has lied in generating material that could be equally **useful/extrapolable in different contexts**.
  - Considering that each (follower) city has its own existing dynamic and that the scale and variety of approaches to be adopted for transferability can even vary per city, the most important aspect when it comes to transferring methodologies amongst cities is that expectations between parties are made open and transparent / explicit.
  - It is also important to adequately consider the **touchpoints** (points of interaction between demand and supply).
- Regarding the **StH Customer Journey** itself:
  - The approach of the process has been based on trying to **cover all the needs and assistance required by customers**, so it is possible that:
    - ⇒ It is questionable whether the CJ **perspective adopted** is correct or sufficient. In any case, this point should be decided based on the objective pursued in each case of implementation.
    - ⇒ If assessed from the point of view of **other stakeholders** involved in the process, it could be considered that not all the necessary steps for the implementation of the Hub have been regarded.
  - **Transitions between steps** are key points for a correct deployment. This is especially relevant when thinking about implementing the Customer Journey "partially": when not entering it from the first step, or only implementing a specific step, etc.
  - **Other approaches** could be adopted at certain points (e.g. in the lists of professionals for customers: should these lists be provided, or rather guide customers on the requirements for selecting them and provide them with the supervision of the work?). This would have an impact on the intended role of the Citizen Hub; it is worth reflecting on whether the mediating role of the Hub would be an objective or an outcome, as a consequence of the approaches taken in the sub-steps of the process.
  - **Mandatory resources** (e.g.: physical offices, or trained staff on-site? Standard marketing material or specific tailored material instead?) will depend on the scope targeted by the Hub

(neighbourhood, city, area, or region) as well as on the specific barriers existing in each context.

- Regarding the **follow-up**, there is room for reflection when implementing the process on the following points:
  - **Results** as the only way to "assess" the whole process.
  - **KPIs** as a "help-to-understand" tool.
  - Margin for action and manoeuvre in the **detection and resolution of risks** not detected beforehand (e.g.: barriers beyond those arising from the top-down / bottom-up approach.

Overall, the **main value** of this protocol is to contribute, with **"real" knowledge drawn from the pilot experiences**, to break down the existing barriers in the retrofitting industry (or at least some of them), without forgetting to what extent the specificities derived from each context and present in this document may support / invalidate the content of these guidelines.As already mentioned at the beginning of this Deliverable in the Introduction, this protocol will be discussed in WP5 with other members of the Save the Homes Replication Board (StHRB) to **evaluate the Citizen Hub applicability to other cities and regions**. A point to be taken into account when creating this Board has been the sufficient representativeness of the members, which should not be considered a trivial issue to ensure the usefulness and validity of such an evaluation.

Annex 1 – The Show material

The content of this deliverable D4.9. has been summarized in 5-steps for replication process where the main information is provided to the follower cities.

Two versions of the factsheets have been done: the first one (left images) is the general application of the OSS implementation process with room to add follower CH context conclusions in each sup-step and, the second one (right images, with answers in blue) provides the general information but also the response for the Valencia pilot, which is the reference pilot for both follower cities.

These factsheets work as a checklist of the whole OSS implementation process and act as a quick guide for the interested cities.

A. Introduction

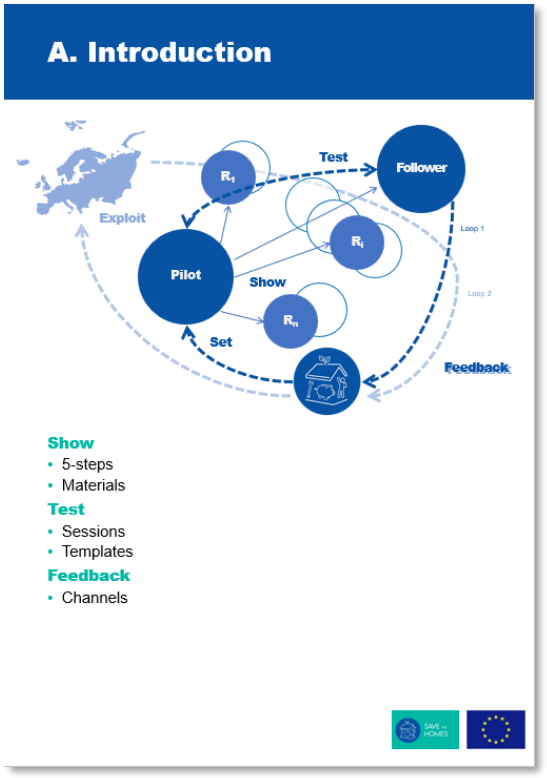


Figure 14. Introduction

B. The 5 steps process

1. Market segmentation

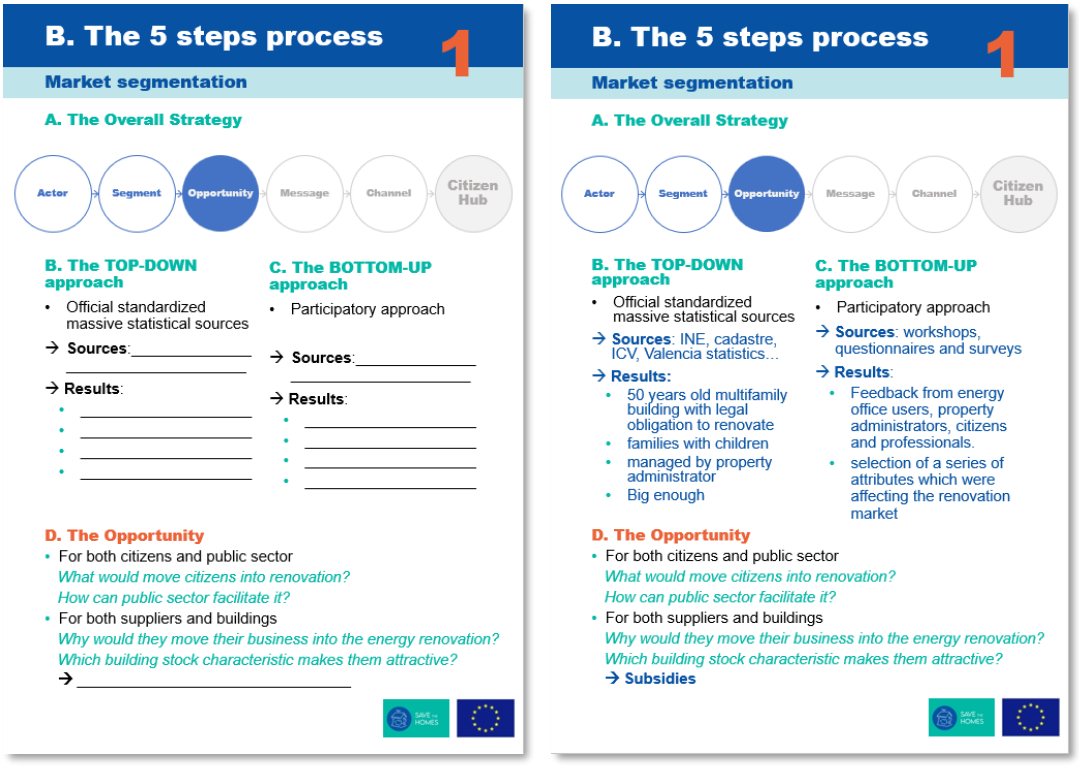


Figure 15.- Market segmentation (left: template; right: Valencia pilot city example)

2. Demand focus

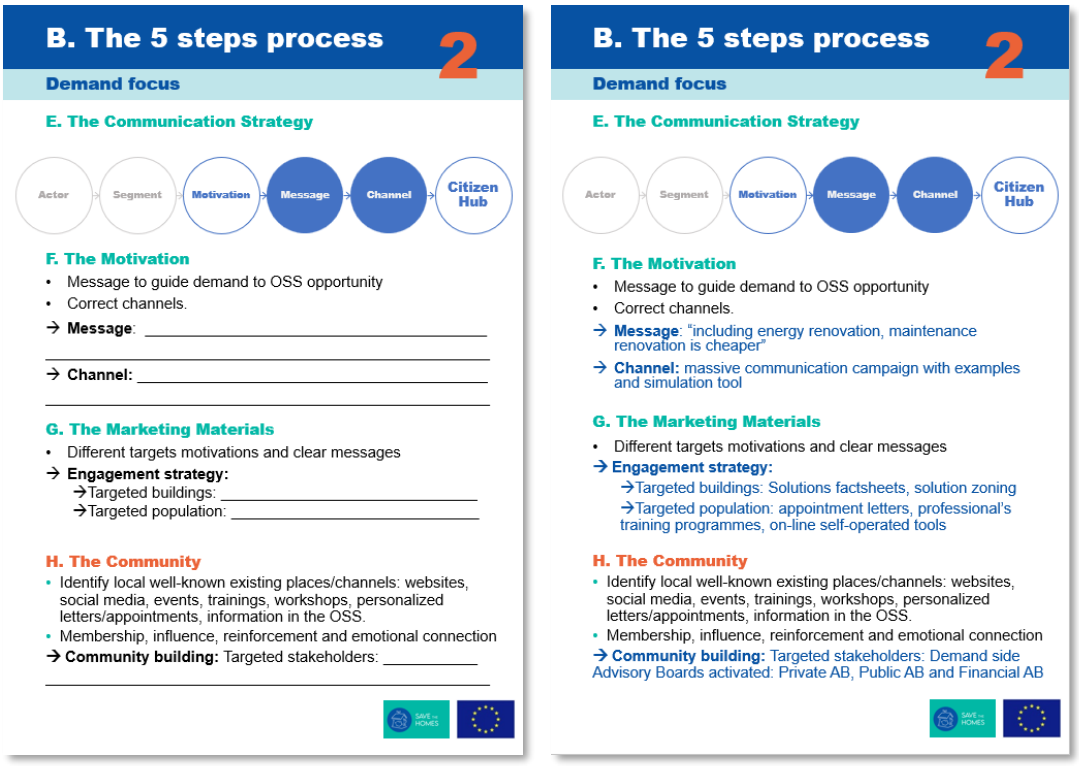


Figure 16. Demand focus (left: template; right: Valencia pilot city example)

3. Supply focus

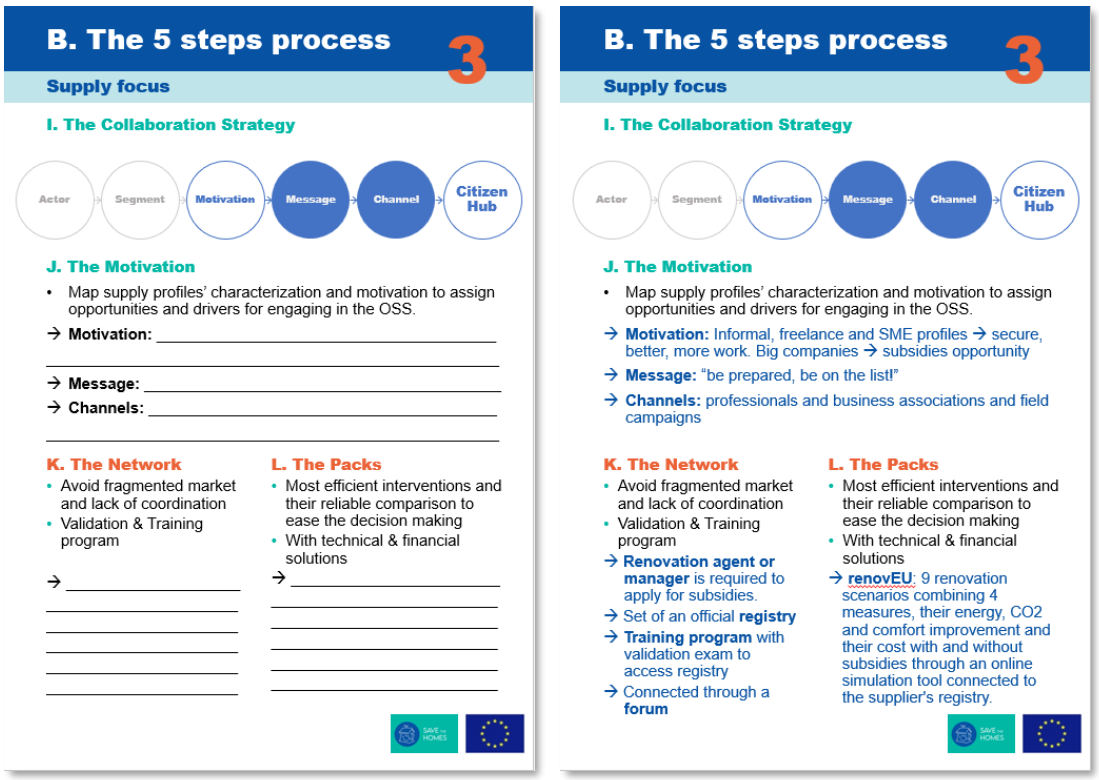


Figure 17. Supply focus (left: template; right: Valencia pilot city example)

4. Customer journey

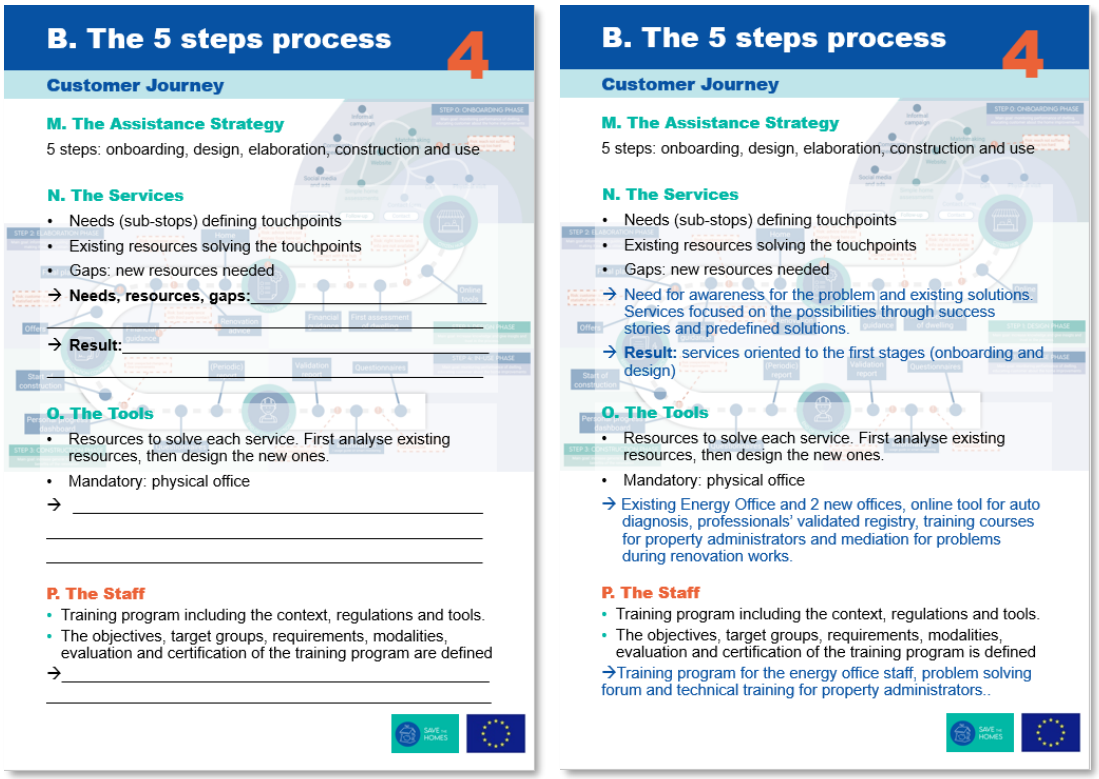


Figure 18. Customer journey (left: template; right: Valencia pilot city example)

5. The follow-up | Monitoring

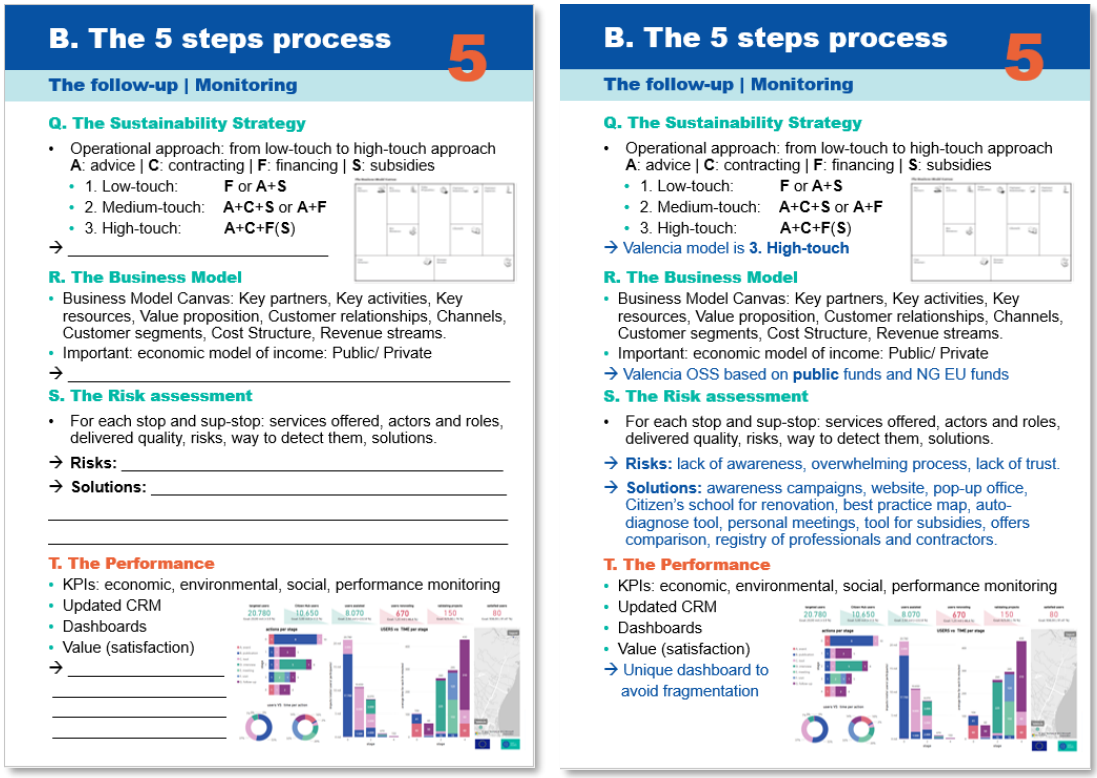


Figure 19. The follow-up | Monitoring (left: template; right: Valencia pilot city example)

C. The testing sessions

D. Feedback

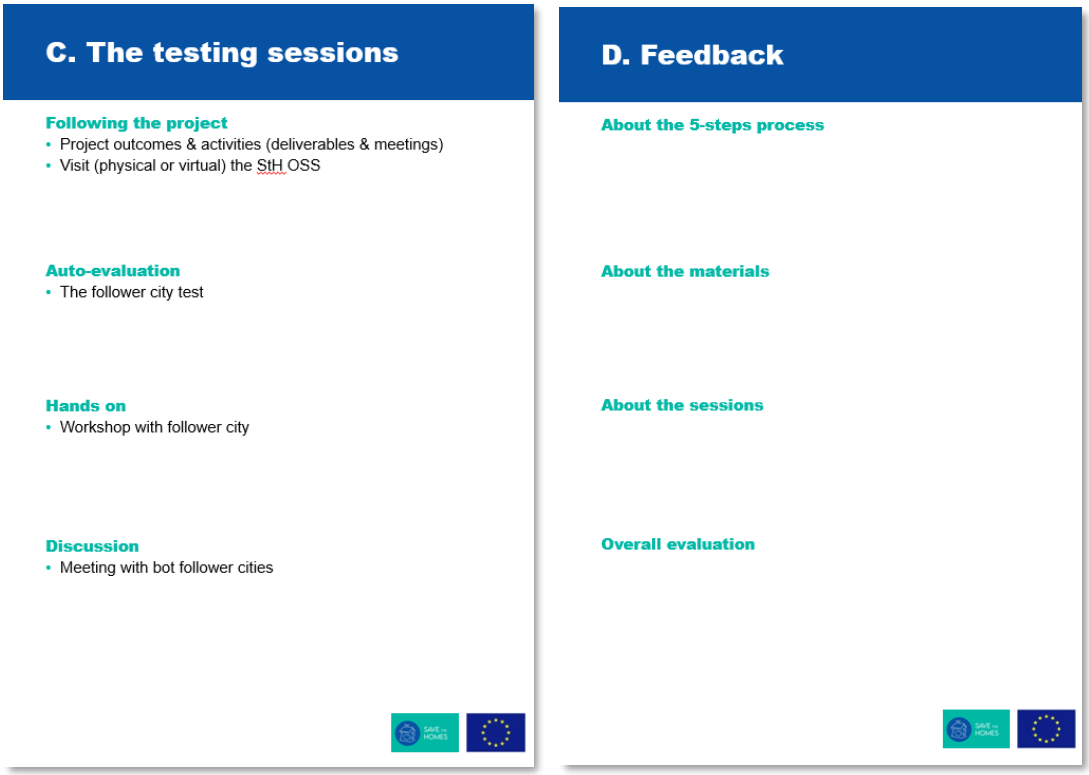


Figure 20. The testing sessions and the feedback

Annex 2 – The DIY templates

For each one of the steps (and sub-steps) of the implementation guidelines presented in this deliverable a DIY template has been developed in order to ease the transferability of the OSS model. This annex compiles the DIY templates (which are available in the different previous deliverables) and examples of the Valencia city pilot of how to fill them. The following table shows a guideline of the available test materials for each sub-step and their location in the corresponding deliverables. More information about these sub-steps and how they were implemented in both pilot cities can be found in these deliverables.

Steps	Sub-steps		Test material	Location of test material/more explanation
1. Market segmentation	A. The overall strategy		StH Doc 1. Mapping metodologies	D2.1: StH demand & supply side mapping: Methodology & results from the 2 pilots
	B. The top-down approach			
	C. The bottom-up approach			
	D. The opportunity			
2. Demand side focus	E. The communication strategy		StH Doc 2. Citizen engagement	D2.2.- Sav€ the Homes guideline for long-term citizen engagement
	F. The motivation			
	G. The marketing materials			
	H. The community			
3. Supply side focus	I. The collaboration strategy		StH Doc3. Supply side involvement	D2.3.- Citizen Hub protocol for supply side community building and network creation
	J. The motivation			
	K. The network			
	L. The packs		StH Doc 5_Offer design	D2.5. Suitable renovation packages and supporting services for the two pilots
4. The StH customer journey	M. The assistance strategy		StH Doc 6_Implementation strategy	D3.2 Strategy & structure to implement the Citizen Hub concept for the two pilots
	N. The Services		StH Doc 4. Supporting services map	D2.4.- Mapped suitable protocols and methods for quality control of the renovation works (including skills definition) and for buildings performance monitoring
	O. The tools		StH Doc 6_Implementation strategy	D3.2 Strategy & structure to implement the Citizen Hub concept for the two pilots
	P. The Staff		StH Doc 7_Staff training	D3.6. Training program for the Citizen hub staff in the two pilots
5. The follow-up	Q. The Sustainability Strategy		Definition of OSS type	D3.3. Citizen Hub Business model for the two pilots.
	R. The Business Model		Business model canvas	D3.3. Citizen Hub Business model for the two pilots.
	S. The Risk assessment		Risk assessment	D4.5. Action plan, risk assessment and quality assurance of the renovation activities
	T. The Performance	KPIs	Monitoring: KPIs definition	D4.2 Citizen Hub model agreement Citizen Hub model agreement including quality control system for the business model elements and monitoring protocols for evaluation of
		Dashboard	StH Doc 8_Monitoring data templates	D3.8. Monitoring data Plan for the two pilots
		Value (Satisfaction)	Monitoring: Value (satisfaction)	D4.2 Citizen Hub model agreement Citizen Hub model agreement including quality control system for the business model elements and monitoring protocols for evaluation of

Figure 21.- Test materials and their location in the deliverables for each sub-steps.

STEP 1. MARKET SEGMENTATION

A. The overall strategy

B. The top-down approach

C. The bottom-up approach

D. The opportunity

Steps	Sub-steps	Test material	Location of test material/more explanation
1. Market segmentation	A. The overall strategy	StH Doc 1. Mapping metodologies	D2.1: StH demand & supply side mapping: Methodology & results from the 2 pilots
	B. The top-down approach		
	C. The bottom-up approach		
	D. The opportunity		

Figure 22. Test materials and their location in the deliverables for step 1

This step (and its sub-steps) aims to map demand and supply side of your renovation market as a first step to design an OSS service in your context and implement your own Citizen Hub. The document that will lead to the definition of your own targets and services, which involve the four sub-steps (from A to D), is **STH Document 1: Mapping methodology** (available in **D2.1.**) and its corresponding spreadsheet. The DIY templates and an example for Valencia city pilot are shown below.

StH Document 1: Mapping methodology

More information available in:

D2.1: StH demand & supply side mapping: Methodology & results from the 2 pilots

A. Presentation

Before starting this journey, present yourself and your friends:

Organization	Activity	Geographical scope	Contact

Example for Valencia city pilot:

1 Presentation

Before starting this journey, present yourself and your friends:

Organization	Activity	Geographical scope	Contact
VCE	providing the OSS service	Municipality of Valencia	alejandro.gomez@canviclimatic.org http://canviclimatic.org/es/
IVE	supports the network of OSS offices through knowledge, expertise and tools for deep renovation	Region of Valencia (NUTS2 ES52)	asanchis@five.es mnavarro@five.es lramirez@five.es https://www.five.es/
VRCP	main contact point with communities of individual owners	Region of Valencia (NUTS2 ES52) Castellon & Valencia (NUTS3 ES522 & ES523) Alicante (NUTS3 ES521)	gerencia@icafv.es contadorcensor@icafv.es https://aaffvalencia.es/
Unió de Consumidors de la Comunitat Valenciana	representing the demand side	Region of Valencia (NUTS2 ES52)	
Asociación Valenciana de Consumidores y Usuarios (AVACU)	representing the demand side	Region of Valencia (NUTS2 ES52)	
Ajuntament d'Onda	representing the public sector	Municipality of Onda	
Ajuntament de Gandia	representing the public sector	Municipality of Gandia	
Ajuntament d'Alcoi	representing the public sector	Municipality of Alcoi	
Diputació de València	representing the public sector	Valencia Province (NUTS3 ES523)	
Promociones e Iniciativas Municipales de Elche (PIMESA)	representing the public sector	Municipality of Elche	
Federació Valenciana de Municipis i Províncies (FVMP)	representing the public sector	Region of Valencia (NUTS2 ES52)	
Conselleria d'Habitatge i Arquitectura Bioclimàtica	representing the public sector	Region of Valencia (NUTS2 ES52)	
Basque Government - Environment, Territorial Planning and Housing	representing the public sector	Basque Country (NUTS2 ES21)	
Consejo Valenciano de Colegios de Agentes de la Propiedad Inmobiliaria (API)	representing the supply side	Region of Valencia (NUTS2 ES52)	
Asociación española de Gestores Públicos de Vivienda y suelo (AVS)	representing the supply side	Spain (ES)	
Colegio Oficial de Arquitectos de la Comunidad Valenciana (COACV)	representing the supply side	Region of Valencia (NUTS2 ES52)	
Colegio Territorial de arquitectos de Castellón (CTAC)	representing the supply side	Castellon Province (NUTS3 ES522)	
Colegio Oficial Ingenieros Industriales (IICV) - contacto VCE	representing the supply side	Region of Valencia (NUTS2 ES52)	
COGITI - contacto VCE	representing the supply side	Region of Valencia (NUTS2 ES52)	
Unión Profesional (contacto VRCP)	representing the supply side	Region of Valencia (NUTS2 ES52)	
Asociación Valenciana de Empresas del Sector Energético (AVAESEN)	representing the supply side	Region of Valencia (NUTS2 ES52)	
Asociación de empresas Promotoras de Valencia (APROVA)	representing the supply side	Region of Valencia (NUTS2 ES52)	
Federación Valenciana de Empresarios de la construcción (FEVEC)	representing the supply side	Region of Valencia (NUTS2 ES52)	
Asociación de Promotores Inmobiliarios de la Provincia de Alicante (PROVIA)	representing the supply side	Castellon Province (NUTS3 ES522)	
Plataforma Tecnológica Española de Construcción (PTEC)	representing the supply side	Spain (ES)	
ATECYR – Spanish Technical Association of Air Conditioning and Refrigeration	representing the supply side	Spain (ES)	

B. Objectives

Now, draft the main objectives pursued through the implementation of the OSS concept. This is important to orientate the search below.

1) My first objective is to _____
2) Also, I would like to _____
3) And, if possible, I would also address _____

Example for Valencia city pilot:

2 Objectives	
Now, draft the main objectives pursued through the implementation of the OSS concept. This is important to orientate the search below.	
My first objective is to	boost renovation rate
Also, I would like to	ensure quality of those renovation
And, if possible, I would try to	involve and aware demand side on the renovation benefits for the long term
	eradicate energy poverty
add rows if needed...	

C. Study area

Do you already have a physical office in place?

YES → define geographical area around it:

- _____ meters from the office
- Districts: [names, codes]
- The whole city: [name, code]

NO → define the wider geographical area under your scope (e.g., city):

- Districts: [name, code]
- The whole city: [name, code]
- The whole region: [name, code]

Example for Valencia city pilot:

3 Study area			
This one is important to define your limits			
Do you already have a physical office in place?			
YES			
define geographical area around it:			
	name	code	comment
Meters from the office:			
Districts:	Poblados Maritimos	4625011	CP 46011 aprox
	Camins al Grau	4625012	CP 46023 aprox
	Algiros	4625013	CP 46021, 46022 aprox
add rows if needed...			
The whole city:			
add rows if needed...			
NO			
define the wider geographical area under your scope:			
	name	code	comment
Districts:			
add rows if needed...			
The whole city:	Municipality of valencia	4625000	
add rows if needed...			
The whole region:	Comundad Valenciana	NUTS2 ES52	
add rows if needed...			

D. Mapping

D. 1 - Object (buildings)

The objective for mapping and segment buildings is to get the greatest effectiveness in the impacts achieved through the renovation process.

First collect information about your building stock context (regulations, history, grants schemes, bureaucracy, or other programs related to buildings):

_____
_____
_____
_____

Then select your characterization criteria:

- component approach for step-by-step renovation replicability
- morphology approach for integral renovation replicability

And list the attributes related to previous approach that you would need to analyse:

Attribute	availability	thresholds/ categories	source	format	granularity	date	comments

Now is time to mix, overlap, cluster: define your typologies, keeping in mind which context circumstances or potential impact related to your approach are interesting for you:

Typology	Attribute (interval)	Attribute (interval)	Attribute (interval)	Attribute (interval)	Attribute (interval)	Solution COMPLEXITY	comments

And finally, you need to quantify (& locate):

Typology	Area/ District/ City	Area/ District/ City	Area/ District/ City	City	Rate	IMPACT	comments
Number							
Rate							

According to previous data, select your target zones and typologies (quick wins for short term, targets for long-term):

⇒ Quick wins: _____

⇒ Typologies: _____

⇒ Zones: _____

Example for Valencia city pilot:

4 Mapping
1 Buildings
The objective for mapping and segment buildings is to get the greatest effectiveness in the impacts achieved through the renovation process

First collect information about your building stock context (regulations, history, grants schemes, bureaucracy, or other programs related to buildings):
building regulations around 1980; mandatory IEE for 50 years old buildings; EP Certificates not so extended, just when owner wants to rent or sell; good climate so usually no heating systems and bad insulation (mostly windows); protecting from sun heat should be important; mostly condominiums with difficult collective decision making; grants for some components; tax benefits for some components

Then select your characterization criteria:	
component approach for step-by-step renovation replicability	**morphology** approach for integral renovation replicability

And list the attributes related to previous approach that you would need to analyse:

Attribute	availability	thresholds/ cat.	source	format	granularity	date	comments
age	Y	50	INE - cadaster	xls - shp	building		
quality	Y	6	INE - cadaster	xls - shp	building		
energy efficiency	Y	E	ICV	WMS	building/dwelling		excel table under request
roof space	Y	30	cadaster	shp	building		to be cooked in the future
heating & DHW	Y	NO; gas or butane	Valencia statistics	xls	districts		
orientation	N	SE to SW					flat city, so homogeneously distributed
TABULA	Y	AB, MFH, TH, SFH	cadaster	shp	building		
add row if needed...							

Now is time to mix, overlap, cluster: define your typologies, keeping in mind which context circumstances or potential impact related to your approach are interesting for you:

Typology	Attribute (interval)	Attribute (interval)	Attribute (interval)	Attribute (interval)	Attribute (interval)	solution COMPLEXITY	comments
old	age (> 50)	TAB (MFH)				high	for IEE analysis
all bad quality roof	quality (> 6)	TAB (TH)				low	roof intervention?
innefficient	EP (> E)					medium	for EPC analysis
no heating	heating (NO; not electric)					low	
pot PV	roof (> 30)					low	
no windows	all res					low	
sunscreen?	orient (S to W)	TAB (AB)				low	have all the orientations
add rows if needed...							

And finally, you need to quantify (& locate):							
Typology	4625011 (Poblados Maritimos)	4625012 (Camins al Grau)	4625013 (Algiros)	City	Rate	IMPACT	comments
old	1.889	813	241	13.923	21	high	
all bad roof	1.288	6	0	2.061	63	very high	
innefficient	551	375	261	5.309	22	high	
'no' heating	413	20	162	2.531	23	high	all city (grants)
pot PV	*5.840*	*3.352*	*1.910*	*59.210*	19	medium	roofs, not buildings
no windows	4.441	1.339	636	28.440	23	high	all city (grants)
sunscreen?	109	100	299	2.904	17	medium	
add rows if needed...							
Res buildings	4.441	1.339	636	28.440			
Rate	29	26	47				

According to previous data, select your QUICK WINS* zones and/or typologies:							
Typologies:	all bad roof	pot PV	sunscreen?				
Zones:	4625011	4625012	4625013				

D. 2 - Subject (citizens, owners, occupants…)

The objective for mapping and segment people is to get the greatest effectiveness in the onboarding, involving and engagement with the renovation process.

We follow here the same structure than for mapping buildings but related to the people living or owning those buildings (previously targeted).

First collect information about your demographic context (regulations, history, habits, traditions, problems…):

_____
_____
_____

Then select your characterization criteria:

- Economic approach, for affordability
- Social approach, for motivation
- Organizational approach, for simplification

And list the attributes related to previous approach that you would need to analyse:

Attribute	availability	thresholds/ categories	source	format	granularity	date	comments

Now is time to mix, overlap, cluster: define your profiles, keeping in mind which context circumstances or potential drivers related to your approach are interesting for you:

Profile	Attribute (interval)	Attribute (interval)	Attribute (interval)	Attribute (interval)	Attribute (interval)	Solution COMPLEXITY	comments

And finally, you need to quantify (& locate):

Profile	Area/ District/ City	Area/ District/ City	Area/ District/ City	City	Rate	IMPACT	comments
Number							
Rate							

According to previous data, select your target profiles (quick wins for short term, targets for long-term):

⇒ Quick wins: _____

⇒ Target Profiles: _____

Example for Valencia city pilot:

4	Mapping
2	Demand side

The objective for mapping and segment people is to get the greatest effectiveness in the onboarding, involving and engagement with the renovation process

First collect information about your demographic context (regulations, history, habits, traditions, problems…):

Then select your characterization criteria:

Economic approach, for affordability	**Social** approach, for motivation	**Organizational** approach, for simplification

And list the attributes related to previous approach that you would need to analyse:

Attribute	availability	thresholds/ cat.	source	format	granularity	date	Other
age	Y	women	INE	xls	district (SC)		
gender	Y	36-60	INE	xls	district (SC)		
income	Y	<7500	INE	web Map service	district (SC)		
household size	Y	1; 2; >2 /children)	INE	xls	district		
vulnerability	Y	Y	calab.es	web Map service	district (SC)		
visits/ inquiries	Y		OSS	xls	person		
propert admin?		Y	VRCP		building		
add rows if needed…							

Now is time to mix, overlap, cluster: define your profiles, keeping in mind which context circumstances or potential drivers related to your approach are interesting for you:

Profile	Attribute (interval)	Attribute (interval)	Attribute (interval)	Attribute (interval)	Attribute (interval)	solution COMPLEXITY	comments
local hero	visits (Q4)					low	
power couples or	size (<3)	children (NO)	income (high)			medium	
with children	size (>2)	children (YES)				high	
absent landlord						medium	
vulnerable						low	
condominium	property admin? (YES)					high	with proper tools, AF could lower this
add rows if needed…							

And finally, you need to quantify (& locate):

Profile	Area/ District	Area/ District	Area/ District	City	Rate	IMPACT	comments
add rows if needed…							
Households							
Rate							

According to previous data, select your target profiles:

Profiles:							

D. 3 - Means (products, services, tools…)

The objective for mapping and segment suppliers is to get the greatest effectiveness in the implementation quality and user satisfaction through the renovation process.

Now you know which buildings you want to address (for replicability) and who you will need to approach (for engagement) in order to trigger an effective and efficient renovation path. So you just need to find out how feasible and reliable those renovations are.

We follow here the same structure than for mapping buildings and citizens but related to the people and companies providing services and solutions for them (previously targeted).

First collect information about your construction sector context (regulations, history, market, business, traditions, problems…):

_____
_____
_____
_____

Then select your characterization criteria:

- Process approach, for accompanying and providing customed solutions (based on the strategies to be defined from the buildings' typologies analysis). This approach is much related with the morphological approach for building characterization, intended for a full deep renovation.
- Solution approach, for providing specific products and/or services to be defined from the buildings' typologies analysis. This approach is much related with the components approach for building characterization, intended for a step-by-step renovation.

And list the attributes related to previous approach that you would need to analyse:

Attribute	availability	thresholds/ categories	source	format	granularity	date	comments

Now is time to mix, overlap, cluster: define your supplier's profiles, keeping in mind which context circumstances or benefits related to your approach are interesting for you:

Profile	Attribute (interval)	Attribute (interval)	Attribute (interval)	Attribute (interval)	Attribute (interval)	Solution COMPLEXITY	comments

And finally, you need to quantify (& locate):

Profile	Area/ District/ City	Area/ District/ City	Area/ District/ City	City	Rate	IMPACT	comments
Number							
Rate							

According to previous data, select your target profiles (quick wins for short term, targets for long-term):

⇒ Quick wins: _____

⇒ Suppliers' Profiles: _____

Example for Valencia city pilot:

4 Mapping
3 Supply side
The objective for mapping and segment suppliers is to get the greatest effectiveness in the implementation quality and user satisfaction through the renovation process

First collect information about your construction sector context (regulations, history, market, business, traditions, problems…):

Then select your characterization criteria:	
Process approach, for accompanying and providing customed solutions (based on the strategies to be defined from the buildings' typologies analysis). This approach is much related with the morphological approach for building characterization, intended for a full deep renovation.	**Solution** approach, for providing specific products and/or services to be defined from the buildings' typologies analysis. This approach is much related with the components approach for building characterization, intended for a step-by-step renovation.

And list the attributes related to previous approach that you would need to analyse:							
Attribute	availability	thresholds/ cat.	source	format	granularity	date	Other
add rows if needed…							

Now is time to mix, overlap, cluster: define your supplier's profiles, keeping in mind which context circumstances or benefits related to your approach are interesting for you:							
Profile	Attribute (interval)	Attribute (interval)	Attribute (interval)	Attribute (interval)	Attribute (interval)	solution COMPLEXITY	comments
add rows if needed…							

And finally, you need to quantify (& locate):							
Profile	Area/ District	Area/ District	Area/ District	City	Rate	IMPACT	comments
add rows if needed...							
Households							
Rate							

According to previous data, select your target profiles:							
Profiles:							

E. Summary

This last step consists of putting everything together to have a better overview:

Area/ District/ City	Area (Km2)	Dwellings (buildings)	Population (households)	Contractors	Building Typology (n)	Demand profile (n)	Supplier profile (n)
					To Solutions	To community	To network

Example for Valencia city pilot:

3 Summary

This last step consists of putting everything together to have a better overview

Table

Zones	Area (km2)	Dwellings	Residential Buildings	Population	households	Contractors	Focus Building Typology	N Building T	Focus Demand profile	N Demand P	Focus Supplier profile	N Supplier P
46011	3,968	31.135	4.441	58.440	24.255	22.097	all bad roof	1.288				
46023	2,367	30.950	1.339	64.335	25.925	22.097	pot PV	*350*				
46021	2,978	22.100	636	38.160	15.835	22.097	sunscreen?	299				
Energy Office Area	9,313	84.185	6.416	160.935	66.015	22.097	old	2.943				
Valencia	134,650	419.955	28.440	790.755	328.975		old; innefficient	13.923				
Valencia Reg.						22.097	grants					
add row if needed...							**To solutions**		**To comunity**		**To network**	

STEP 2. DEMAND SIDE FOCUS

E. The communication strategy

F. The motivation

G. The marketing materials

H. The community

Steps	Sub-steps	Test material	Location of test material/more explanation
2. Demand side focus	E. The communication strategy	StH Doc 2. Citizen engagement	D2.2.- Sav€ the Homes guideline for long-term citizen engagement
	F. The motivation		
	G. The marketing materials		
	H. The community		

Figure 23. Test materials and their location in the deliverables for step 2

This step (and its sub-steps) aims to design a proper long-term communication strategy and build an involved and durable stakeholders' community. The document required to define your local context demand side needs, which involves the four sub-steps (from E to H), is **StH Document 2: Citizen engagement** (available in **D2.2**.) The DIY templates and an example for Valencia city pilot are shown below.

StH Document 2: Citizen engagement

More information available in:

D2.2.- Sav€ the Homes guideline for long-term citizen engagement

Introduction

The objective is to design a communication strategy for the demand side profiles, by detecting potential opportunities to on-board, appropriate messages and best fitting channels, to get them to the Citizen Hub and their most suitable renovation path. This is to be done without losing sight of the design of adapted marketing materials and training programs.

A. Needs, motivations & barriers

Before starting this journey, have your Mapping tables at hand.

A. 1. Targeted Buildings

> The objective of defining building typologies is to get the greatest effectiveness in the definition of targeted buildings intervention categories.

Think of the data sources available at your context level in order to know better your buildings weaknesses and potential solutions (such as mandatory reports or certificates which might be analysed in order to extract information):

_____
_____
_____
_____
_____

Now, for each of your targeted building typologies, note the component (façade, roof, heating system…) on which you could more easily act to improve its energy performance, and the solution type you would propose (change into…, addition of…)

Building typology	Component	Solution type

Not forgetting a potential step by step approach for going from a single measure implementation to a deep retrofitting. Select the most suitable strategies in your context:

- Low maintenance
- Ecology
- Economical
- Passive house
- Lifespan
- Comfort
- Low energy consumption
- Integral
- All-electric
- Other: _____

A. 2. Targeted population

The objective of defining personas is to get the greatest effectiveness in the definition of targeted population wishes and possibilities.

Think of the data sources available at your context level in order to know better your citizen motivations and opportunities to on-board on the renovation process (such as administration surveys or scientific studies):

_____
_____
_____
_____
_____

Now, for each of your targeted demand profiles, note the motivations (necessity, pleasure, step-up…), opportunities (existing problems, grants…), objectives (renovation, replication, dissemination…), drivers (status, access, power, stuff) and opportunities of success (very low to very high):

Demand profile	Motivation	Opportunities	Objective	Driver	Success?

Example for Valencia city pilot:

Profile	Characterization	Motivation	Opportunities	Probability of success	Objective	Drivers (Messages)
single occupant	household size = 1 person AND (age<35 OR age>65)	necessity	Almost none	Low		
Couples (+ single occupant?)	household size = 2 person AND (age>35 AND age<65) AND family type = without children (OR household size = 1 person AND age BETWEEN 35 AND 65)	live and pleasure	When things wear out or go wrong; At the time of purchasing; When re-purposing a space or extending the home / Open to incentive schemes and polices that generate income for the homeowner or add value to the property; Will choose to use specialist professionals to ensure a quality job / The order of retrofit will be driven by aesthetic priorities, e.g. the desire for new kitchen may lead to a new boiler	**High**	**renovation**	Power (choose, complaint, rate)
Families with children	household size >= 2 person AND family type = with children	live and a home	When things wear out or go wrong; At the time of purchasing; When re-purposing a space or extending the home / Within the regular cycle of decorating and refurbishment; The order of retrofit will be driven by health and comfort priorities	**High**	**renovation**	Access (to information, services, tools)
Multiple occupants	household size >= 3 person AND family type = without children AND age < 35	necessity	Almost none	Very low		
Absent landlord	tenancy = rental scheme	step-up	Open to the use of finance schemes if these are cost-effective within the context of 'improving to sell'; Unlikely to consider technologies with long payback times unless the cost of installation is passed on	**Medium**	**replication**	Stuff (revenue)
"local heroes"	(detect and promote from other users' profiles)	project	Interested in 'clever' energy saving technologies (caring about the character of the home being maintained)	**Very high**	**influence**	Status (recognition)
"antagonists"	(when limited to financial issues – look into vulnerable profiles)	shelter	Limited to when grants are available; Will undertake consequential improvements if dictated by grant scheme	Low		
Condominiums (several types)	(mix of previous profiles sharing property and making collective decisions)	various			Various (including **RES**)	

Figure 24. Demand side mapping and involvement (Valencia city pilot)

B. Campaign strategy design

B. 1. Targeted Buildings

The objective of defining a building typology itinerary is to get the greatest impact from the communication strategy messages and channels.

According to the itineraries' strategy adopted for this step, we start defining the communication strategy structure related to each building stock categories. For each of your building typologies, define the opportunity to renovate (an attribute that clearly leads to a potential intervention), the message or approach and the channel (things or allies delivering the message). Be aware that they can be more than one:

Building typology	Opportunity	Message	Channel

Example for Valencia city pilot:

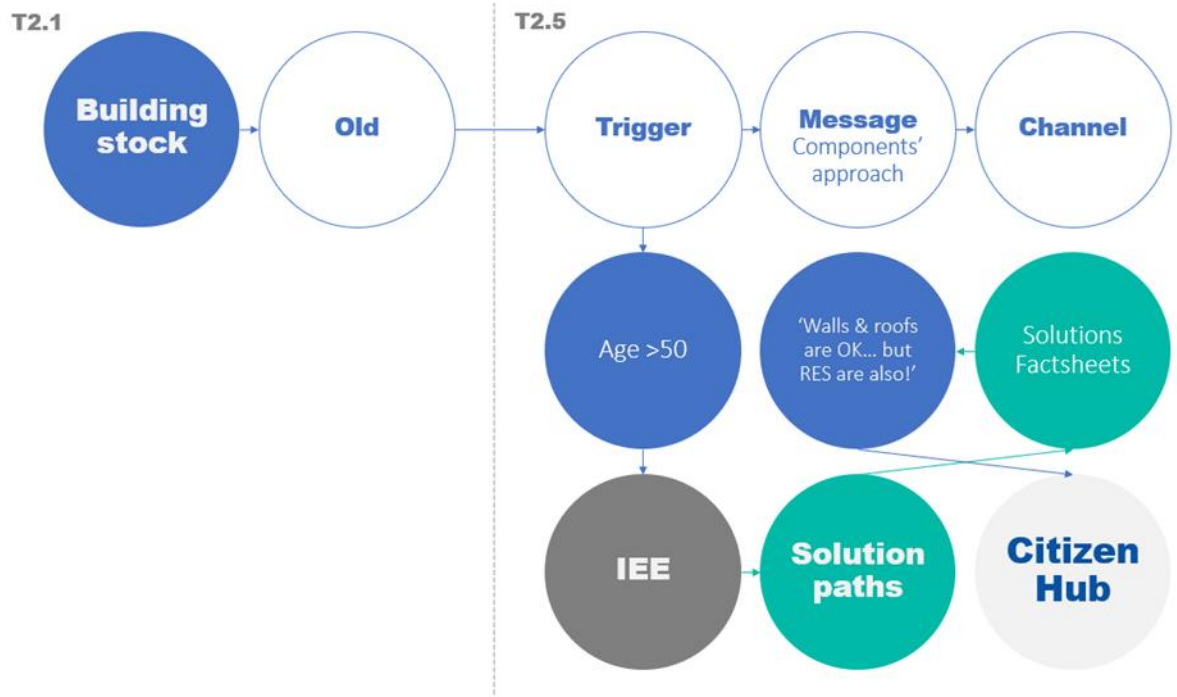


Figure 25. Communication strategy itinerary according to building typology 'old' (Valencia city pilot)

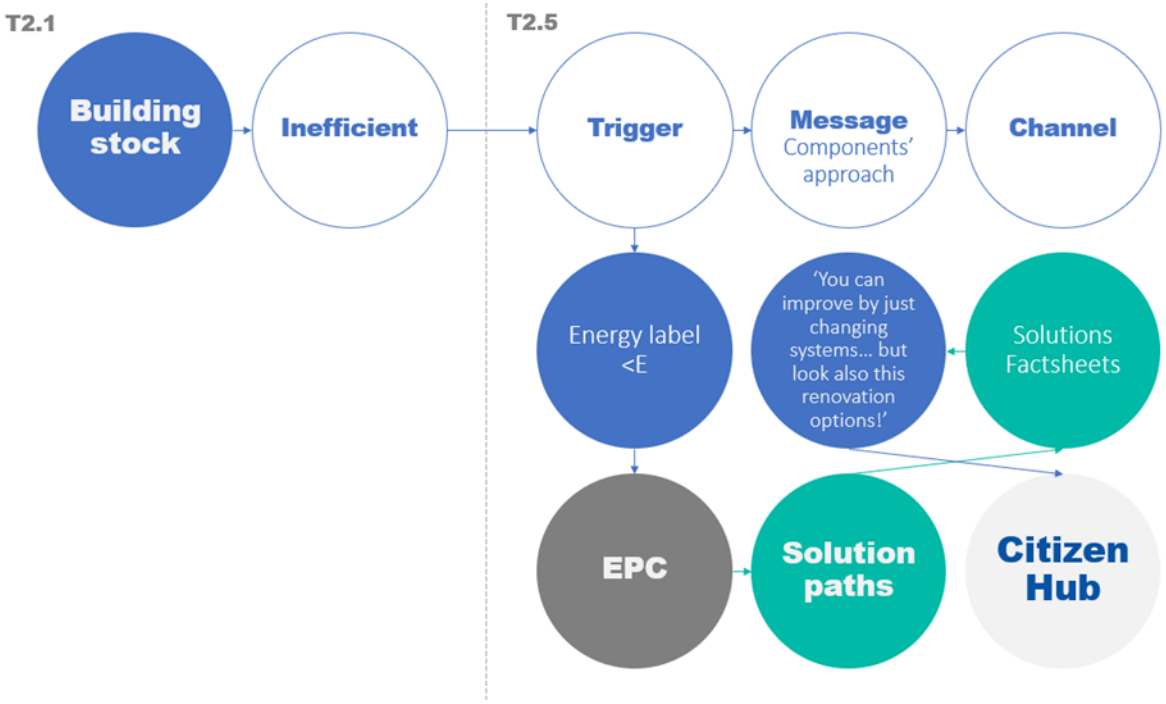


Figure 26.- Communication strategy itinerary according to building typology 'inefficient' (Valencia city pilot)

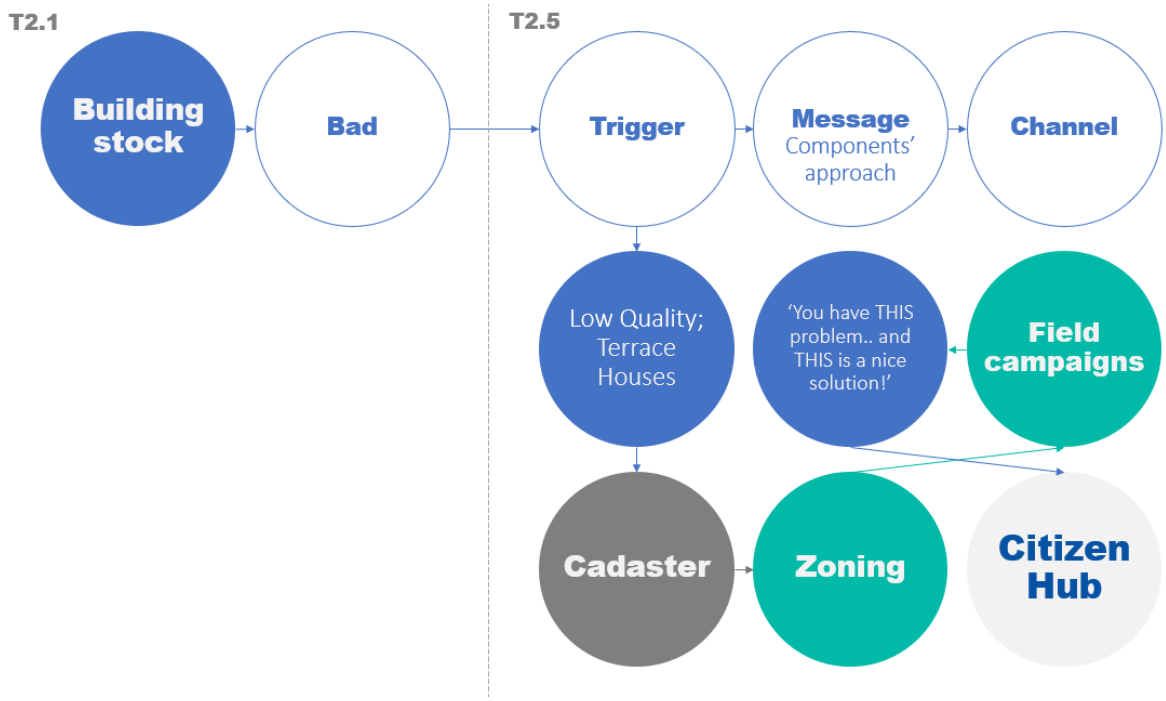


Figure 27.- Communication strategy itinerary according to building typology 'bad' (Valencia city pilot)

B. 2. Targeted Population

The objective of defining a demand profile itinerary is to get the greatest effectiveness in the definition of the communication strategy messages and channels.

According to the itineraries' strategy adopted for this step, we start defining the communication strategy structure related to the demand side profiles. For each of your demand profiles, define the opportunity to renovate (a moment or action that clearly leads to a potential intervention), the message or approach and the channel (things or allies delivering the message). Be aware that they can be more than one:

Demand profile	Opportunity	Message	Channel

Example for Valencia city pilot:

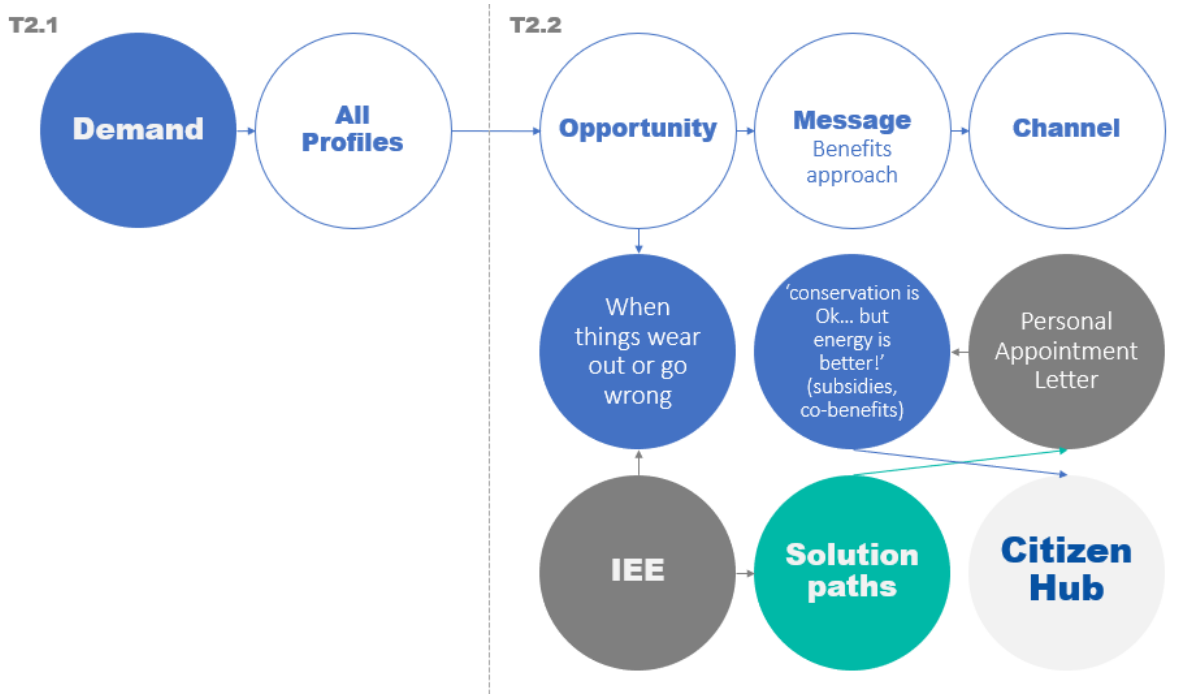


Figure 28.- Itinerary for things wore out or gone wrong (Valencia city pilot)

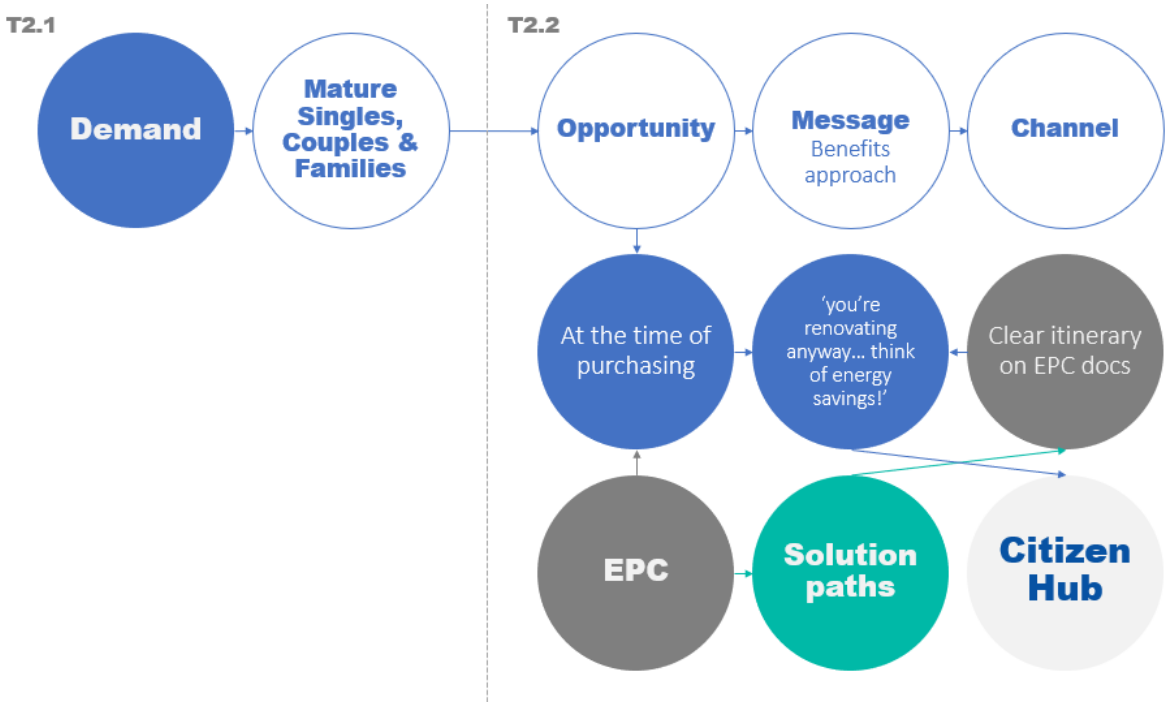


Figure 29.- Itinerary for the time of purchasing (Valencia city pilot)

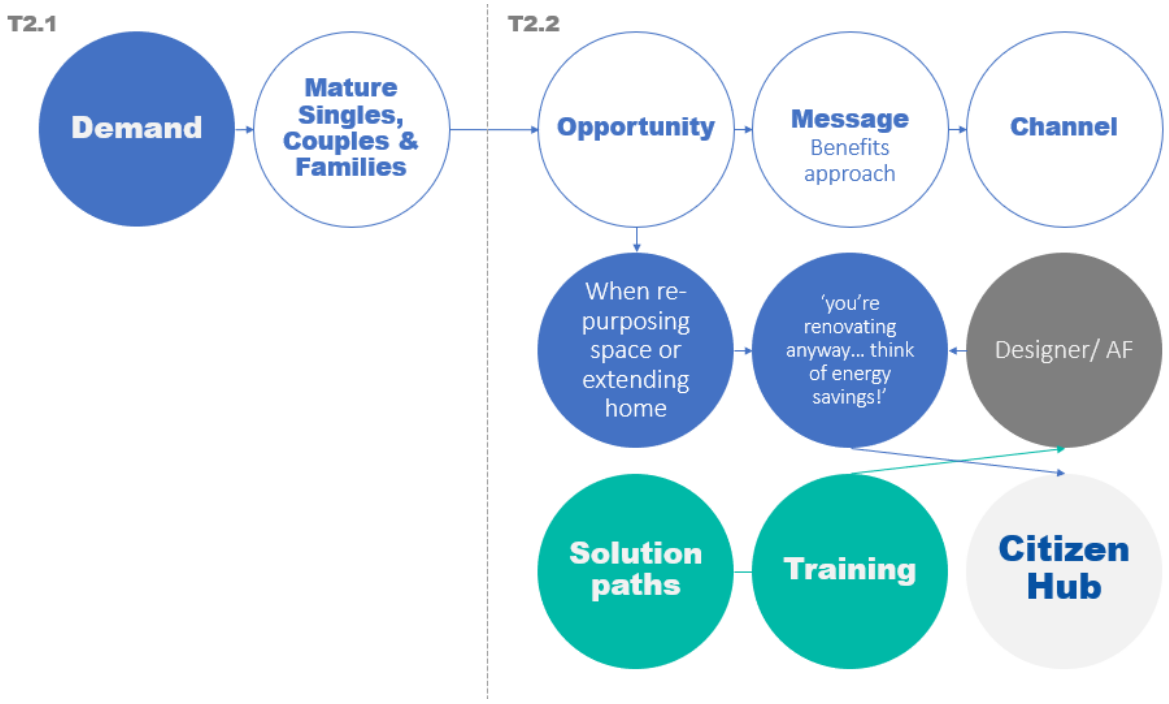


Figure 30.- Itinerary for the time to re-purposing (Valencia city pilot)

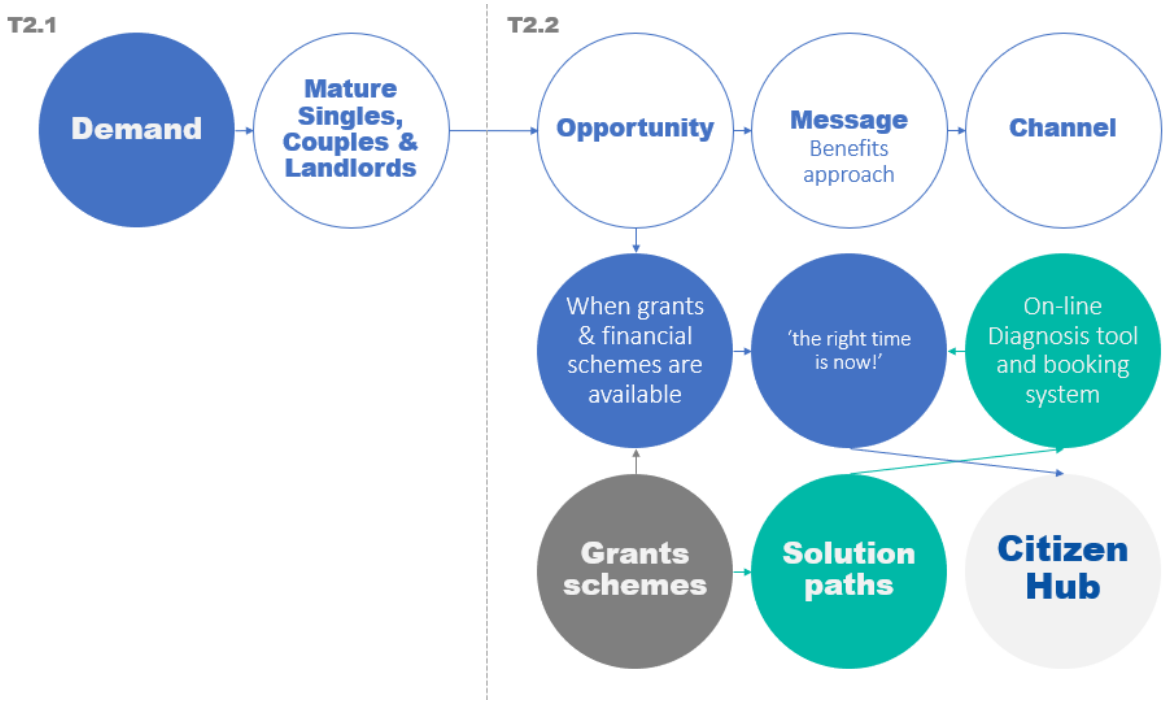


Figure 31.- Itinerary for advantageous financial schemes (Valencia city pilot)

C. Community Building

According to the itineraries' strategy adopted for this step, we need to get to the previously detected stakeholders and potential allies, that would be contacted in order to fine-tune campaigns and implement specific actions.

C. 1. Targeted stakeholders

The objective of building a Demand side –Advisory Board is to get the greatest closeness to the local context from the personas/ profiles' descriptions (fine-tunning) and implement better communication campaigns.

First part of this section is to involve local organizations in touch with targeted population, which have expertise in dealing and communicating with them. On the other hand, community leaders, public figures as well as local "grass roots" organizations that are motivated to support energy efficiency for its public benefits, including economic well-being of community members, and community carbon mitigation goals are included to promote the renovation initiatives. Therefore, the Sav€ the Homes **Advisory Boards** (StHAB) have a pivotal role in establishing sustainable networks to support the local eco-systems.

Think of your natural allies already detected in the Mapping activity and those who have arisen while thinking on potential channels to deliver your messages. Define their adscription (public or private), their team (grouping entities performing the same king of activities, such as condominium, consumers' association…), and objective for contacting them (refine communication strategy, disseminate…):

Entity	Public/ Private	Team	Objective

Example for Valencia city pilot:

Demand side – Private AB: Building owners and organizations (association of final users and consumers)			
Consumers associations	Unió de Consumidors de la Comunitat Valenciana	NB. Assoc.	2 associacions, through VCE contacts
	Asociación Valenciana de Consumidores y Usuarios (AVACU)		2 associacions, through IVE contacts
condos	2 condominiums, through VRCP members	SS	Municipal service asigned to vulnerable population in the neighbourhood

Table 1.- Spanish Private Sector Demand side AB (Valencia city pilot)

Demand side – Public AB: City councils, local governments, and regional/ national organizations such as Public Housing Providers or Associations of public condominium members			
Local government	Federació Valenciana de Municipis i Províncies (FVMP)	Regional gov.	Conselleria d'Habitatge i Arquitectura Bioclimàtica
	Promociones e Iniciativas Municipales de Elche (PIMESA)		Basque Government - Environment, Territorial Planning and Housing
	Ajuntament d'Alcoi		
	Ajuntament de Gandia		
	Ajuntament d'Onda		
	Diputació de València		

Table 2.- Spanish Public Sector Demand side AB (Valencia city pilot)

D. Summary

As a conclusion, all the detected messages and channels, are to be translated into allies, resources, products and services, and put together so to understand the next activities needed to perform, the contacts to be made, and the channels and relations to get, in the pilot field activities:

Messages & channels			
Offered by the Citizen Hub		Citizen hub orbit	
Content	Strategy	External Resources	Allies
To customer journey & business model		To Solutions	To Contacts (AB) and campaigns

Example for Valencia city pilot:

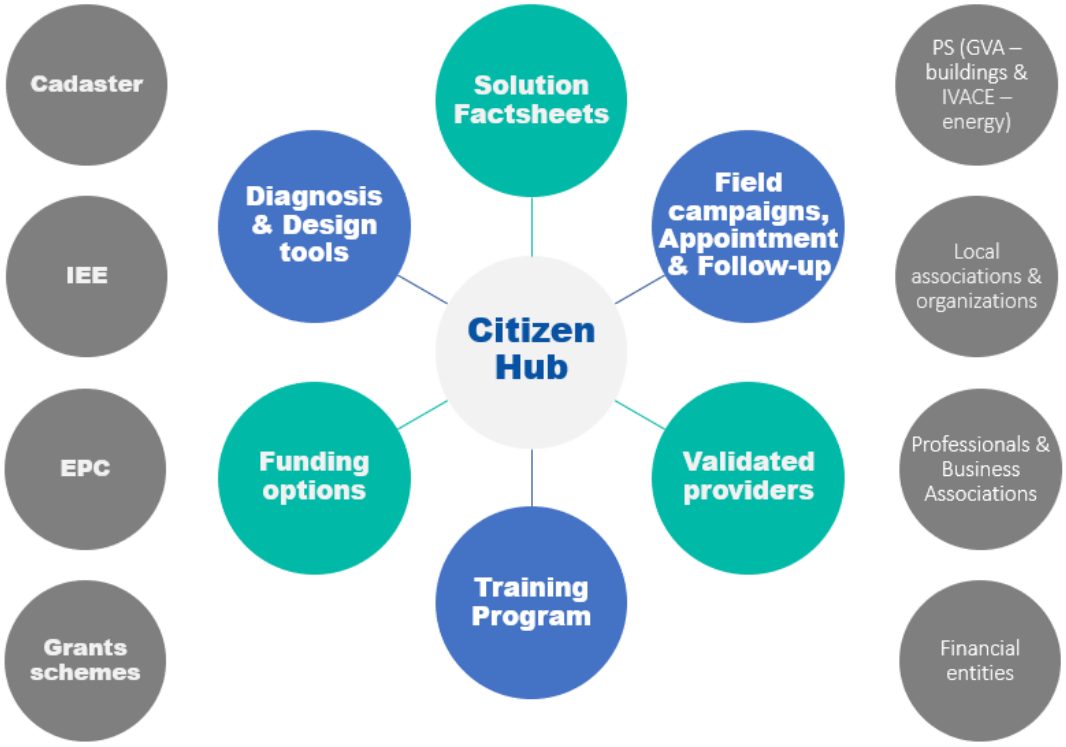


Figure 32.- Valencia citizen engagement ecosystem (Valencia city pilot)

STEP 3. SUPPLY SIDE FOCUS

I. The collaboration strategy

J. The motivation

K. The network

L. The packs

Steps	Sub-steps	Test material	Location of test material/more explanation
3. Supply side focus	I. The collaboration strategy	StH Doc3. Supply side involvement	D2.3.- Citizen Hub protocol for supply side community building and network creation
	J. The motivation		
	K. The network		
	L. The packs	StH Doc 5_Offer design	D2.5. Suitable renovation packages and supporting services for the two pilots

Figure 33. Test materials and their location in the deliverables for step 3

This step (and its sub-steps) aims to define your local context supply side offer in order to design a proper long-term collaboration strategy and build an involved, durable stakeholders' network.

- For sub-steps **I** to **K**, the document that will lead you to the definition of your own messages and channels is **StH Document 3: Supply side involvement** (available in **D2.3.- Citizen Hub protocol for supply side community building and network creation**.)
- For sub-step **L. The packs,** the DIY document is **STH Document 5: Offer design** and it is available in **D2.5. Suitable renovation packages and supporting services for the two pilots.**

The DIY templates and the available examples for Valencia city pilot are also shown below.

StH Document 3: Supply side involvement

More information available in:

D2.3.- Citizen Hub protocol for supply side community building and network creation

Introduction

The objective is to design a collaboration strategy for the supply side profiles, by detecting potential opportunities to on-board, appropriate messages and best fitting channels, to get them to the Citizen Hub and find their most profitable renovation offer presentation. This is to be done without losing sight of the design of appropriate validation mechanisms and training programs.

A. Activities, size & roles

Before starting this journey, have your Mapping tables at hand.

> The objective of defining supply side profiles is to design optimal and reliable offers improving trust and awareness of homeowners, reducing renovation decision making processes' costs and time, and mainstreaming innovative technical solutions adapted to the local context.

First of all, think of the purpose of your profiling:

- □ Is it for better offer the selected technical solutions?
- □ Is it for better design affordable collaboration agreements between them and the Citizen Hub?
- □ Is it for better design the citizen Hub customer journey?

Now, think of the data sources available at your context level in order to know better your supply side 'business as usual' and expertise, and strengths, weaknesses, motivations or expectations (such as public accountability, construction sector reports data, massive surveys or scientific papers which might be analysed in order to extract information or statistical sources aggregating construction sector metrics):

_____
_____
_____
_____
_____

A. 1. Targeted suppliers' Solutions:

From your supply side mapping (based on the object of the service or product provided), note the sector or subsector of expertise (insulation, RES, heating system…) which you would attract into the citizen hub, to improve residential buildings energy performance, the solution type you would prefer to implement (change into…, addition of…) on which part of the building (roof, façade…), and the profile characterizing the specific sector/ sub-sector:

Sector/ sub-sector	Component	Solution type	Profile
To Solutions			To Capacities

Example for Valencia city pilot:

Object (service provided)	**Subject** (providing a service)	**Role** (in the renovation process)
Walls (windows, shadows & insulation)	The informal	The facilitator
Roofs (insulation)	The professional	The reseller
Heating	The SME	The installer
Renewable energy sources	The big company	The all-in

Table 3.- Providers' segmentation matrix (Valencia city pilot)

A. 2. Targeted suppliers' capacities:

Now, for each of your targeted supply side profiles, note the motivations (secure work, better work, more work…), opportunities (attending a training; asking about a specific solution; uploading documents…), objectives (activation, renovation, replication…), drivers (status, access, power, things) and opportunities of success (very low to very high):

Profile	Motivation	Opportunities	Objective	Driver	Success?
To Campaign strategy design					

Example for Valencia city pilot

Profile	Characterization	Motivation	Opportunities	Probability of success	Objective	Drivers (Messages)
The informal 'bungler'	Size =1person AND p-age >40 AND legal entity =NULL AND recognition =low		Almost none	**Low**	activation	
The informal 'handyman'	Size =1person AND p-age >40 AND legal entity =NULL AND recognition =high	Secure work	Detected by SS or mouth to ear; when asking for a subsidy; when buying materials at DIY stores; in local social events: local dissemination campaigns addressing benefits and helping fulfilling requirements (lowering complexity)	**Medium**	activation	**Status** (recognition, validation, security)
Young prepared	Size <3person AND (p-age <40 OR E-age <5) AND e-level =high AND role =facilitator	Better work	When attending a training; when asking a product provider about a specific solution; when updating association data/quota; when processing subsidies or authorizations; when uploading documents or fulfilling requirements for finalizing administrative processes (authorizations, subsidies, certificates…)	**Very High**	renovation	**Access** (knowledge, resources, tools)
Experienced installer	Size <3person AND (p-age >40 OR E-age >5) AND role =installer	New service	When attending a product presentation; when updating association data/quota; when working for PS; when uploading documents or fulfilling requirements for finalizing administrative processes (certificates…)	**High**	renovation	**Access** (knowledge, resources, tools)
Settled (prepared & experienced) SME	Size >=3person AND (p-age >40 OR E-age >5) AND Size>€€	New locations	When attending a product presentation; when updating association data/quota; when working for PS; when uploading documents or fulfilling requirements for finalizing administrative processes (certificates…)	**Medium**	replication	**Access** (knowledge, resources, tools)
Big all-in company	Size >10person AND (p-age >40 OR E-age >5) AND Size>€€€ **AND role =reseller**	More work	Almost none	**Low** **?**	Replication	**Power** (choose client, set solution)
…						**Stuff** (publicity, clients…)

Figure 34.- Supply side mapping and involvement (Valencia city pilot)

A. 3. Targeted suppliers' roles:

Finally, from the supply side mapping according to the role played on the renovation process (reseller, facilitator, installer, all-in…), note their strength or weakness (e.g., 5 to 1) on the different stages of the whole business experience (you can mention the specific functionality you refer to, in brackets), where they can help the citizen Hub (4-5), or the Citizen Hub can help them (1-2):

Role	On-boarding	Evaluation	Design	Construction	Follow-up
To customer journey					

B. Campaign strategy design

B. 1. Targeted Suppliers

> The objective of defining a supplier profile itinerary is to get the greatest impact from the collaboration strategy messages and channels.

From this very objective, focus of the itinerary strategy depicted below is based on the supply side of the renovation process as subjects with different capacities, motivations and drivers, to whom our messages have to penetrate, and the selected channels have to reach.

Therefore, we start defining the collaboration strategy structure related to each target profile by defining the driver to involve them into the Citizen Hub activities and services' offer (the reward), the message or approach and the channel (things or allies delivering the message). Be aware that they can be more than one:

Profile	Driver	Message	Channel
			To Network

Example for Valencia city pilot

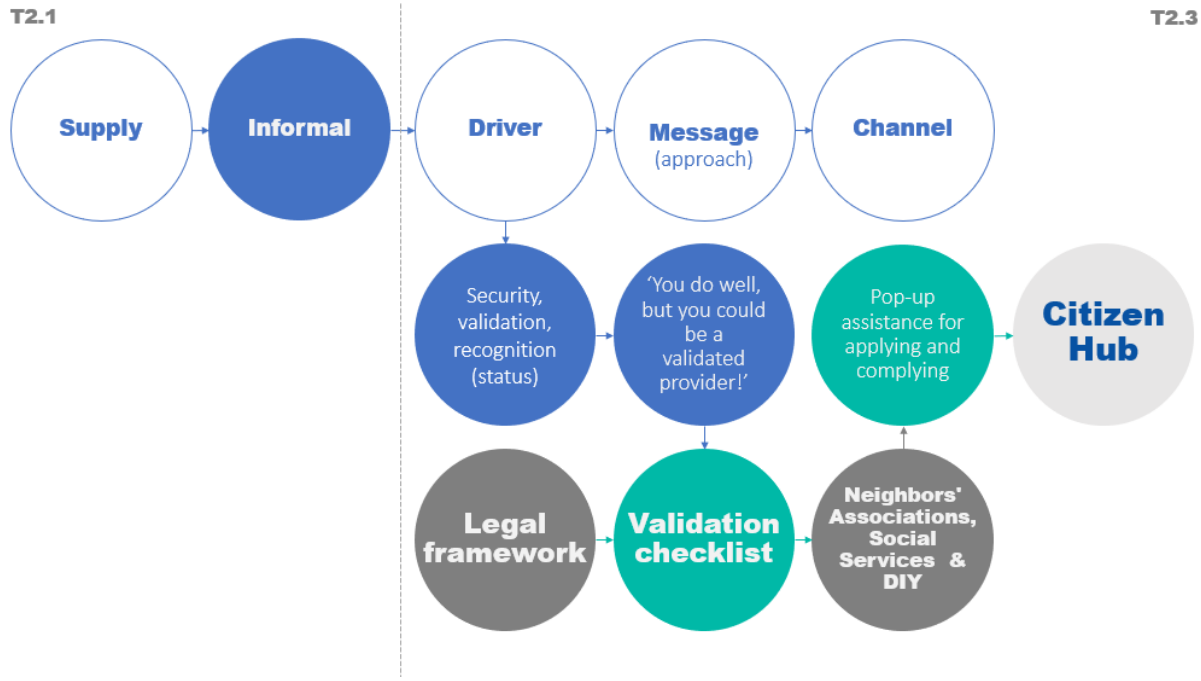


Figure 35.- Collaboration strategy itinerary according to supply side profile 'informal (Valencia city pilot)'

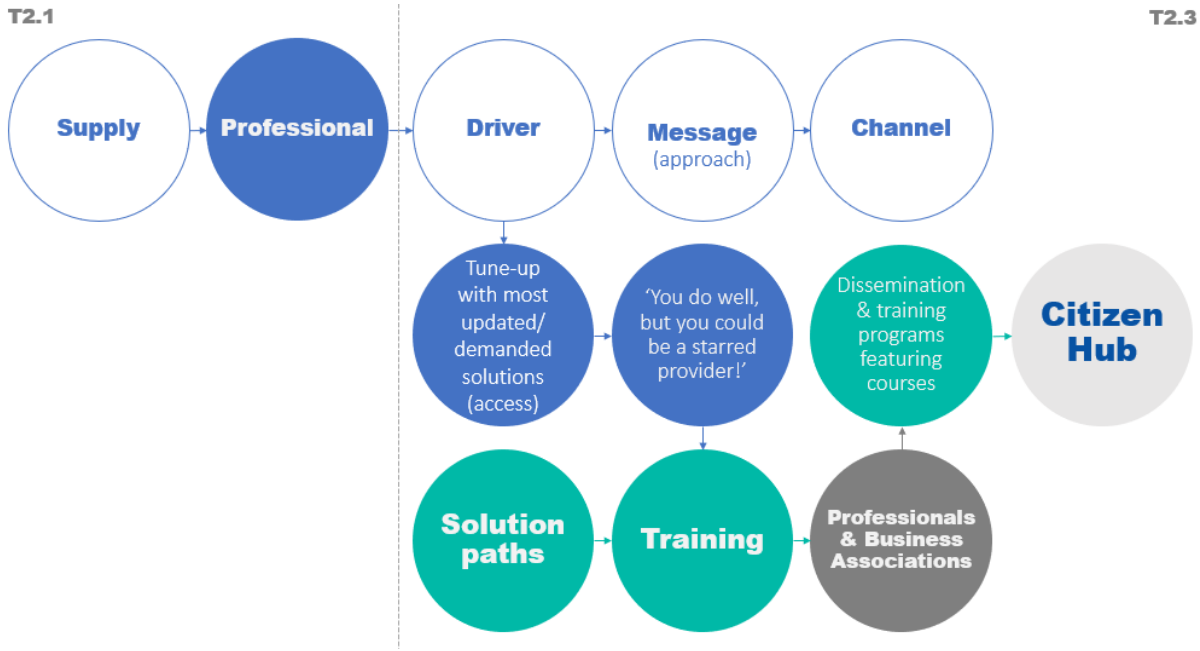


Figure 36.- Collaboration strategy itinerary according to supply side profile 'professional' (Valencia city pilot)

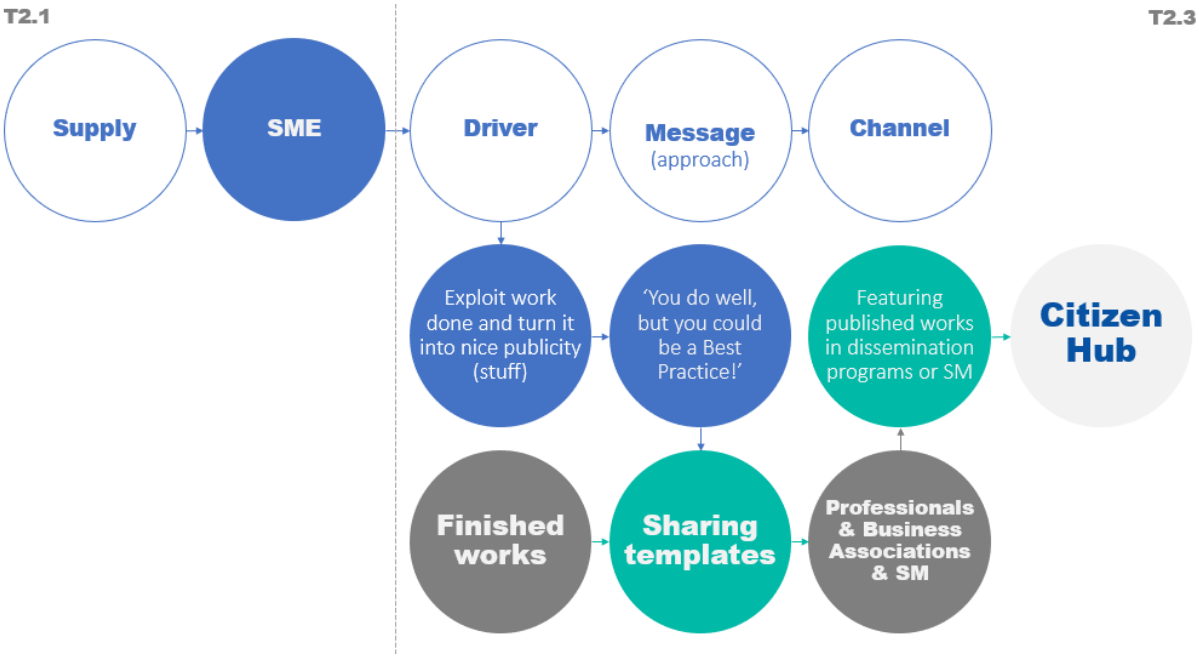


Figure 37.- Collaboration strategy itinerary according to supply side profile 'SME' (Valencia city pilot)

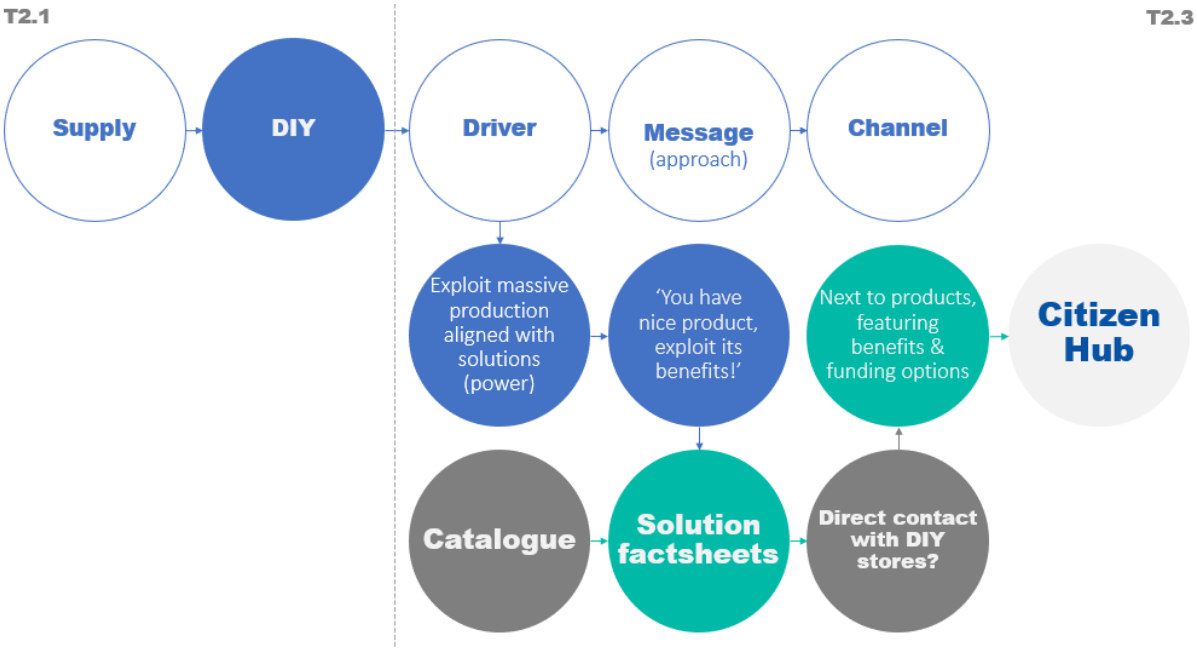


Figure 38.- Collaboration strategy itinerary according to supply side profile 'DIY store' (Valencia city pilot)

C. Services network

According to the itineraries' strategy adopted for this step, we need to get to the previously detected stakeholders and potential allies, that would be contacted in order to fine-tune campaigns and implement specific actions.

C. 1. Targeted stakeholders

The objective of building a Supply side –Advisory Board is to get the greatest closeness to the local context from the providers' profiles' descriptions (fine-tunning) and implement better collaboration campaigns.

First part of this section is to involve local organizations and associations in touch with targeted providers, which have expertise in organizing and communicating with them, to understand how they decide, plan and think, so to learn how this could affect their choices related to NZEB-renovation business, to help defining the right approach techniques. Therefore, the Sav€ the Homes **Advisory Boards** (StHAB) have a pivotal role in establishing sustainable networks to support the local eco-systems.

Think of your natural allies already detected in the Mapping activity and those who have arisen while thinking on potential channels to deliver your messages. Define their adscription (public or private), their team (grouping entities performing the same kind of activities, such as professionals –facilitators, installers…-, sectorial business associations…), and objective for contacting them (refine collaboration strategy, disseminate, join efforts…) and why (channelling assets):

Entity	Public/ Private	Team	Objective (channel)

Example for Valencia city pilot

Supply side AB: Producers, suppliers, contractors etc. with good reputation and references on local level			
Property Managers	VRCP – Colegio de administradores de fincas	Business	Asociación Valenciana de Empresas del Sector Energético (AVAESEN)
	Consejo Valenciano de Colegios de Agentes de la Propiedad Inmobiliaria (API)		Asociación de empresas Promotoras de Valencia (APROVA)
	Asociación española de Gestores Públicos de Vivienda y suelo (AVS)		Federación Valenciana de Empresarios de la construcción (FEVEC)
Professionals	Colegio Oficial de Arquitectos de la Comunidad Valenciana (COACV)		Asociación de Promotores Inmobiliarios de la Provincia de Alicante (PROVIA)
	Colegio Territorial de arquitectos de Castellón (CTAC)		Plataforma Tecnológica Española de Construcción (PTEC)
	Colegio Oficial Ingenieros Industriales (IICV) - contacto VCE		ATECYR – Spanish Technical Association of Air Conditioning and Refrigeration
	COGITI - contacto VCE		SENSEDI – Best technologies for buildings
	Unión Profesional		SIBER – Ventilation systems

Table 4.- Spanish Supply side AB (Valencia city pilot)

D. Summary

As a conclusion, all the detected messages and channels, are to be translated into allies, resources, products and services, and put together so to understand the next activities needed to perform, the contacts to be made, and the channels and relations to get, in the pilot field activities:

Messages & channels			
Offered by the Citizen Hub		Citizen Hub orbit	
Content (What?)	Strategy (How?)	External Resources (Based on…)	Allies (Through whom?)
To Customer Journey & Business Model		To Training, Materials & Tools	To Contacts (ABs) & Campaigns

Example for Valencia city pilot

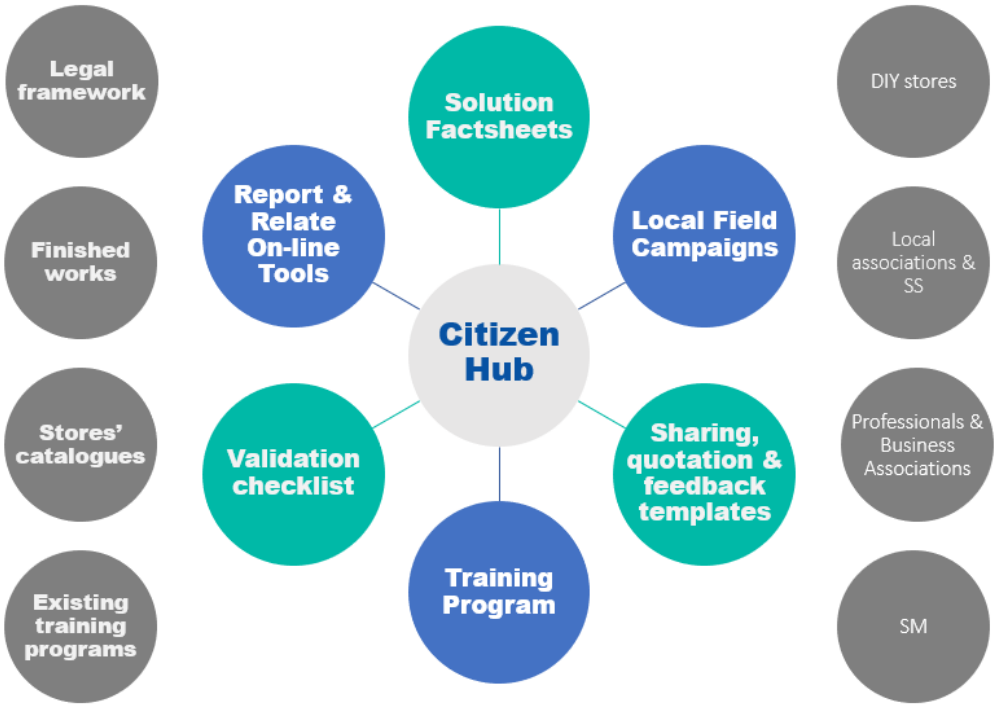


Figure 39.- Valencia supply side engagement ecosystem (Valencia city pilot)

StH Document 5: Offer design.

More information available in:

D2.5. Suitable renovation packages and supporting services for the two pilots.

Introduction

This task will help you design your solutions offer by a three-step approach:

1) Verification of the mapping: The outcomes of T2.1, 2.2 and 2.3 are capital, so have them at hand.
2) Renovation packages: most energy efficient measures will be chosen that answer the needs of the building segments in the pilot cities (outcomes of T2.1) as also identified buyer personas (answering the motivational drivers)
3) Creation of the Citizen Hub offer considering the supply networks and financial options

For each targeted sector we will focus on the characteristics (opportunities) and drivers (messages) to lead to an energy renovation solution (strategy), and how the citizen hub will use these solutions characteristics to promote them (channels, info, tools…)

A. Verification of the mapping outcomes

A. 1. Targeted Buildings

The objective of targeting building typologies is to get the greatest impact with the promotion of energy renovation solutions

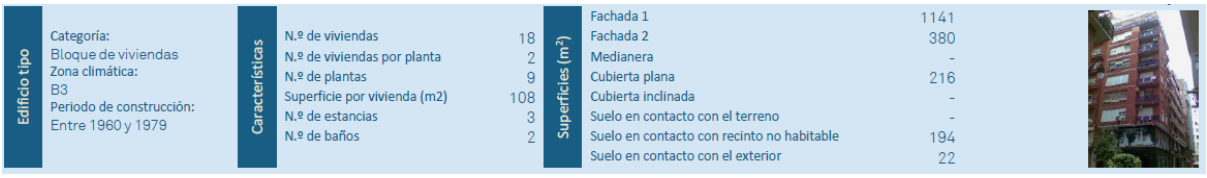
Remember how your targeted buildings are: _____
_____
_____
_____
_____

What are their opportunities for intervention and how can you translate those into an specific **action** (class) in to a building **component** (category). How would you describe the **solutions** (Measure)?

Building characteristic From D2.2 & 2.2	component (category)	Action (Class)	Solution (Measure)?

This is the base for the definition of tips, recommendations and **solutions**.

Example for Valencia city pilot



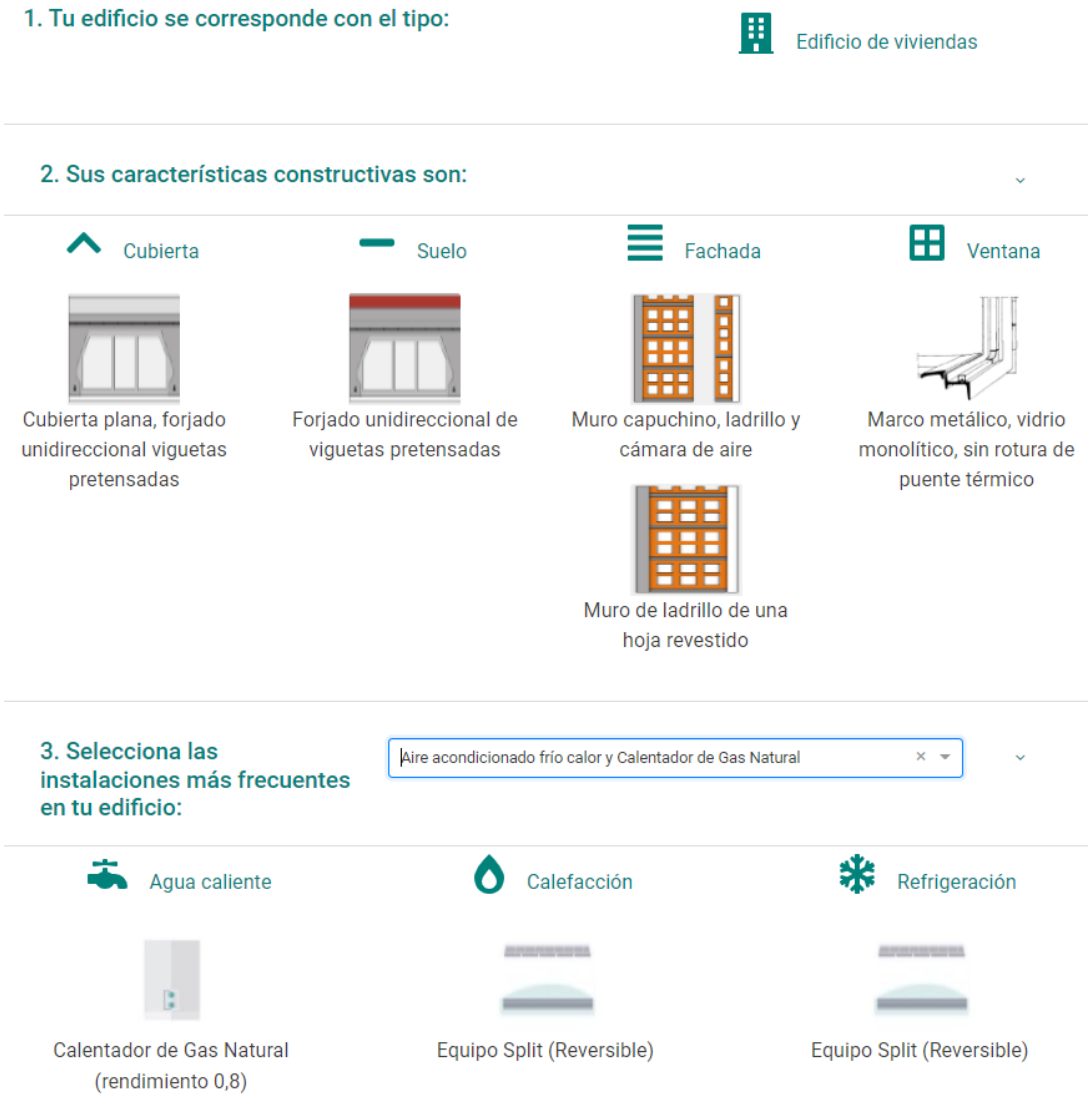


Figure 40.- Targeted building characterization (Valencia city pilot)

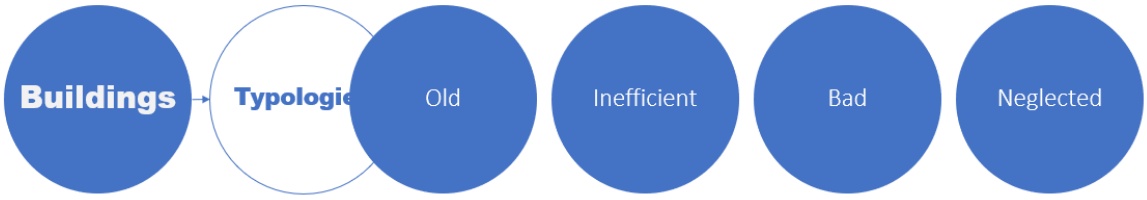


Figure 41.- building stock typologies for Valencia pilot (Valencia city pilot)

A. 2. Targeted population

The objective of targeting personas is to get the greatest effectiveness in the adoption of the promoted solutions

Remember how your targeted population is: _____
_____
_____
_____

What are their interests for intervention and how can you translate those into drivers and triggers you could pull according to their buildings' needs (this is, the potential measures drafted in previous step)

Personas From D2.1 & 2.2	Interest	**driver**	Solution (Measure)? From A. Targeted buildings

This is the base for the definition of **strategies** to promote solution packs.

Example for Valencia city pilot

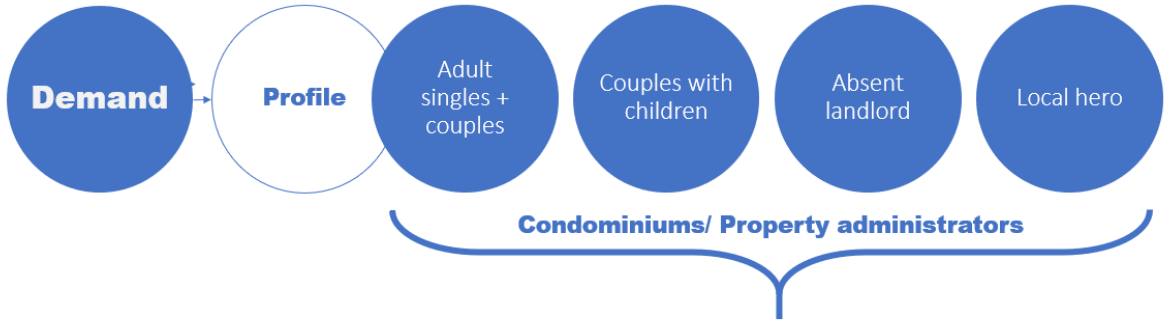


Figure 42.- demand side profiles for Valencia pilot (Valencia city pilot)

A. 3. Targeted Providers

The objective of targeting supply side profiles is to ensure that proposed solutions are available on the local market.

Remember how your targeted suppliers are: _____
_____
_____
_____

What are their capacities for offering products and services and how can you translate those into more or less complete packages (i.e., does it include the project, the permits, the maintenance…?) covering the whole requirements for implementing the measures drafted in previous steps

Sectors From D2.1 & 2.3	Capacities	**Service offered**	Solution (Measure)? From A. Targeted buildings

This is the base for the assessment of the **availability** of the selected solution packages.

Example for Valencia city pilot

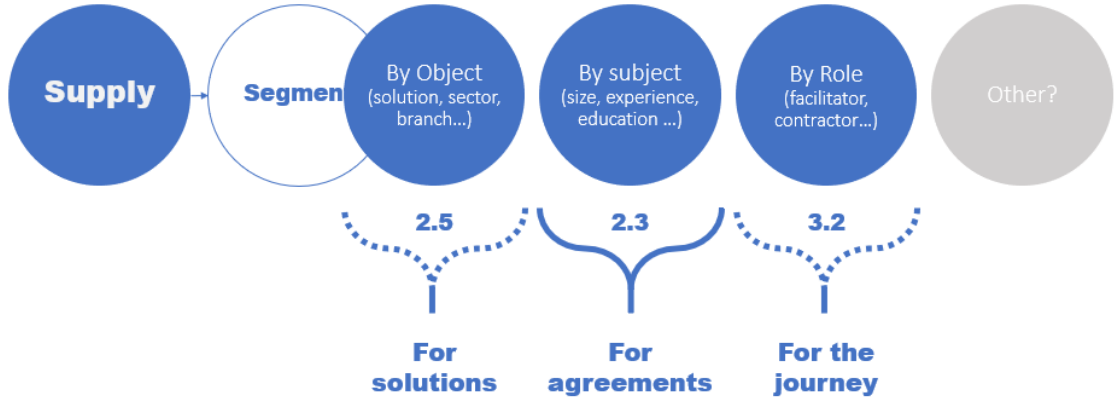


Figure 43.- Supply side segmentation purposes (Valencia city pilot)

B. Renovation packages

Based on previous section, we will shape the kind of solutions to be promoted from the Citizen hub, in terms of a structured description allowing later on the set of a comparable Citizen Hub offer, including specific providers, commercial brands, financing options, etc…

B. 1. Measures

In this section we will define the characterization of the types of measures to promote, in terms of qualitative attributes and quantitative variables.

From the analysis of targeted buildings, it is clear the interest of stablishing the component on which the measure applies (category) and the action that the measure implies (class), both of **the qualitative attributes.**

Category (Component)		
Name From A) Targeted buildings	Description	Driver From B) Targeted population

Class (Action)		
Name From A) Targeted buildings	Description	Driver From B) Targeted population

In order to sort or compare, it is also important to **quantify some variables**, which will be better defined according to the targeted population drivers.

Variables		
Driver From B) Targeted population	Name	Description

As a summary, take the Solutions, name them, and characterize them according to the previously defined Classes and Categories (attributes), and their impact in the previously defined Variables:

	Attributes			Variables			
Solution (Measure)	Name	**Class (Action)**	**Category (Component)**	Var 1	Var 1	Var 3	…
				Improvement: Low/ Medium/ High			

Example for Valencia city pilot

Category		
Name	Description	Driver
Envelope	Building skin, potentially solving acoustic and/or thermal insulation, and aesthetics	comfort, health, savings, value
RES	New equipment in the generation side, for CO2 and EPnr savings	sustainability
Technology	New equipment in the consumption side, more efficient	sustainability, savings
Behaviour	Operation of the different 'smaller' systems, such as basic home automation, appliances or lightning can make a difference in comfort and consumption	Comfort, health, savings
…		
Class		
Name	Description	Driver
External addition	Application from the outside part of the living areas	Disruption
Element replacement	Changing one kind of element more or less independent from the envelope which involves minimum 'wet' works	Disruption, grants
System addition	Installation of local energy source taking advantage of local conditions	Disruption, grants
System replacement	Changing DHW and/or cooling/heating system for a more efficient one (Aerothermal heat pump)	Disruption, grants
Training	Learning some tips and tricks to lower consumption and gain comfort!	Disruption,
…		

Table 5. Potential attributes according to targeted buildings analysis (Valencia city pilot)

Variables		
Name	Description	Driver
Non-energy reno Cost	Cost of priority works for the user (conservation and/or accessibility), in €	Duty
Energy reno Cost	Cost of energy renovation works (needed to access grant scheme), in €	Savings, access to grants
Cost inc. funding	Final cost for user (energy and non-energy, discounting the grant)	Savings
Energy demand	Estimated energy needed to maintain the home in comfort conditions, depending on the thermal envelope, in kWh/m2y	Comfort, access to grants
Primary energy consumption (non-renewable)	Estimated energy consumed to maintain the home in comfort conditions, depending on the systems, in kWh/m2y (comparable variable not depending on energy source)	Savings, energy bills
CO2 emissions	Translation from PE,nr according to an energy factor	sustainability
Time out of comfort	Hours a year on which is impossible to maintain a home in comfort conditions, according to envelope and systems	Comfort
Number of formalities	Permits needed to undertake the renovation	Disruption, distrust
Number of contracts	Number of professionals needed to contract to design/ perform the renovation works	Disruption, distrust
…		

Table 6. Measurable (and accessible) variables (Valencia city pilot)

	Attributes			Variables			
Measure	Name	Class	Category	€/dwell	Energy	CO2	Comfort
rCV	Windows	Envelope	Window replacement	7.816 €	M	M	M
rAE_03	Walls	Envelope	External addition	7.019 €	H	H	H
rAE_02	Roof	Envelope	External addition	1.019 €	L	L	L
rAE_01	Floor	Envelope	External addition	759 €	L	L	L
BC_A	DHW HP	Technology	System replacement	1.705 €	M	M	M
BC_ACR	W/H/C HP	Technology	System replacement	11.583 €	H	H	H
rPV	PV panels	RES	System addition	4.185 €	H	H	L
w	Workshop	Behaviour	Training	0 €	L	L	M
…							
				Improvement:	Low	Medium	High

Table 7.- Solution definition scheme (Valencia city pilot)

B. 2. Scenarios

Now take into account that individual measures might not be enough to achieve some targets in terms of one or more variables (i.e., not saving enough to get a grant).

In this case, we might be in need to **combine** previous measures into different solution packs, defined as per the **promoted strategy** used to empower them:

	Attributes		Variables			
Pack	Measures	**Strategy**	Var 1	Var 1	**Var 3**	…
00		Do nothing (baseline, according to building type)			(Target!)	

Example for Valencia city pilot

	Attributes		Variables				
	Measures	Strategy	Cost	With Grant	Energy	CO2	Comfort
00		Do nothing	0,00	0	115,62	21,55	823
02	rCV rAE_01 rAE_02 rAE_03	Comfort/ Aesthetics	16.618,42	9.971,05	81,34	13,80	101
03	BC_ACR	Disruption	11.583,21	6.949,93	64,29	10,89	19
05	rCV BC_A	Disruption/ Comfort	9.522,04	9.522,04	84,83	14,85	625
06	rPV	Emissions	4.185,17	2.511,10	79,66	15,46	823
007	rCV rAE_01 rAE_02 rAE_03 BC_ACR	True believers	26.055,02	7.255,02	30,06	6,44	8
09	02+07	Comfort/ Aesthetics	20.803.60	4.160.72	27,57	4,69	101
10	03+07	Disruption/ savings	15.768,38	3.153,67	25,88	4,80	19
12	05+07	Disruption/ Comfort/ savings	13.707,22	4.797,53	47,11	8,45	625
13	06+07	True believers	30.240.19	11.440,19	3,23	0,55	8

Table 8.- Scenario definition scheme (Valencia city pilot)

C. The Citizen Hub offer

Now you should design the integrated solutions for home renovations in cooperation with the supply network and the negotiations reached there.

C. 1. Network

As presented in other deliverables (D2.1 & D2.3), creating supply side networks is capital to root the collaboration strategies on the local context, and get to offer solutions available by trusted suppliers. Summarize below your best friend related to the solutions you are trying to promote. Be aware that access to some of these services might come with a target in some variables defined in E (e.g., minimum budget)

Actor From D2.1 & 2.3	**Service offered** **From C) Targeted suppliers**	Description	**Variable (and target)?**

Example for Valencia city pilot

Supply side AB: Producers, suppliers, contractors etc. with good reputation and references on local level			
Property Managers	VRCP – Colegio de administradores de fincas	Business	Asociación Valenciana de Empresas del Sector Energético (AVAESEN)
	Consejo Valenciano de Colegios de Agentes de la Propiedad Inmobiliaria (API)		Asociación de empresas Promotoras de Valencia (APROVA)
	Asociación española de Gestores Públicos de Vivienda y suelo (AVS)		Federación Valenciana de Empresarios de la construcción (FEVEC)
Professionals	Colegio Oficial de Arquitectos de la Comunidad Valenciana (COACV)		Asociación de Promotores Inmobiliarios de la Provincia de Alicante (PROVIA)
	Colegio Territorial de arquitectos de Castellón (CTAC)		Plataforma Tecnológica Española de Construcción (PTEC)
	Colegio Oficial Ingenieros Industriales (IICV) - contacto VCE		ATECYR – Spanish Technical Association of Air Conditioning and Refrigeration
	COGITI - contacto VCE		SENSEDI – Best technologies for buildings
	Unión Profesional		SIBER – Ventilation systems

Table 9.- Spanish Supply side AB (Valencia city pilot)

C. 2. Financial solutions

Finally, think of D2.6 and try to fit best financing options to your selected solutions. Take into account that some of these options can define targets needed in section E (e.g., minimum investment or savings achieved)

Financing option From D2.6	Service offered (loan/ grant)	Description	**Variable (and target)?**

Example for Valencia city pilot

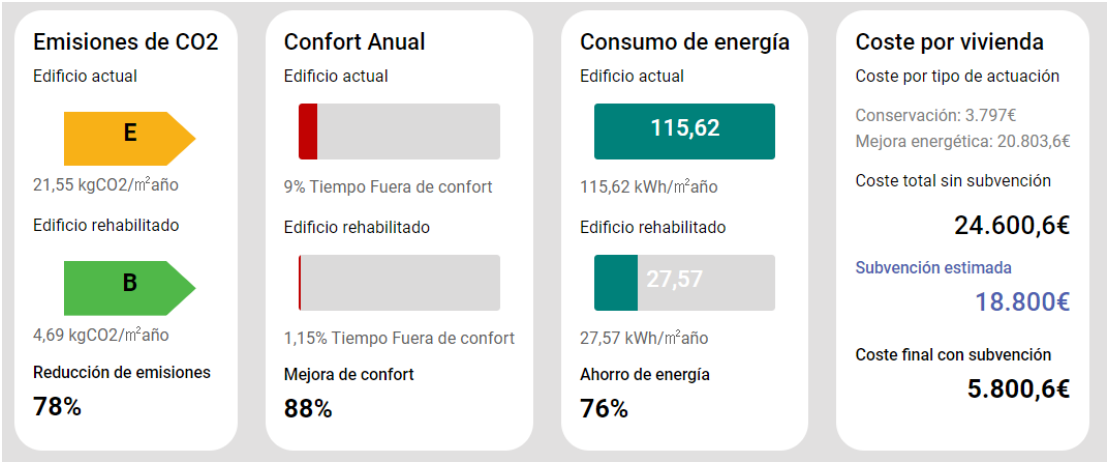


Figure 44.- Scenario 09 with accessibility costs included (Valencia city pilot)

C. 3. Solution packs

Together with the work in demonstration buildings in WP4, solution packs will be defined as a combination of the whole itinerary:

A. Targeted buildings
B. Targeted personas
C. Targeted providers
D. Examples of measures
E. scenarios
F. Network
G. Financial solutions

STEP 4. THE STH CUSTOMER JOURNEY

M. The assistance strategy

N. The Services

O. The tools

P. The Staff

Steps	Sub-steps	Test material	Location of test material/more explanation
4. The StH customer journey	M. The assistance strategy	StH Doc 6_Implementation strategy	D3.2 Strategy & structure to implement the Citizen Hub concept for the two pilots
	N. The Services	StH Doc 4. Supporting services map	D2.4.- Mapped suitable protocols and methods for quality control of the renovation works (including skills definition) and for buildings performance monitoring
	O. The tools	StH Doc 6_Implementation strategy	D3.2 Strategy & structure to implement the Citizen Hub concept for the two pilots
	P. The Staff	StH Doc 7_Staff training	D3.6. Training program for the Citizen hub staff in the two pilots

Table 10. Test materials and their location in the deliverables for step 4

This step (and its sub-steps) aims to define your local context implementation strategy in order to design a proper long-term smooth experience customer journey harmonized with the StH validated framework.

- For sub-steps **M. The assistance strategy** and **O. The tools,** the document that will lead to the definition of your own services menu, existing supporting tools and new developments needs is **StH Document 6: Implementation strategy** and is available in **D3.2 Strategy & structure to implement the Citizen Hub concept for the two pilots.**
- For sub-step **N. The services,** the DIY document is **STH Document 4: Supporting services map** and it is available in **D2.4.- Mapped suitable protocols and methods for quality control of the renovation works (including skills definition) and for buildings performance monitoring.**
- For sub-step **P. The staff**, the DIY document is **STH Document 7_Staff training** and it is available in **D3.6. Training program for the Citizen hub staff in the two pilots**

The DIY templates and the available examples for Valencia city pilot are also shown below.

StH Document 6: Implementation strategy

More information available in:

D3.2. Strategy & structure to implement the Citizen Hub concept for the two pilots.

Introduction

First of all, keep in mind that this methodology aims to draft a structure and strategy for implementing the Citizen Hub concept in your context. This means you need to scout your **adaptation to the StH customer journey**, fill the gaps, **and design your services menu**.

For doing so, have at hand **¡Error! No se encuentra el origen de la referencia.** available in Section **¡Error! No se encuentra el origen de la referencia.** (page **¡Error! Marcador no definido.**) of these Deliverable 3.2, where you will find, for each stage:

- Objectives and goals
- Risks
- Touchpoints

This checklist deals therefore with the mapping of suitable tools and mechanisms that can assist you with the implementation of each step of the customer journey model and help follow the decision-making process of the customer.

A. The customer journey framework

Please check table below and just **mark the steps** you think you need to implement for delivering a complete service to your customers and split your answer **according to the profile to whom the service is addressed**.

You can add comments that help you define the functionalities or tools that you are looking for on each of them.

	Stop 0 - ON-BOARDING	
	AWARENESS	INTERACTION
demand		
supply		
staff		

	Stop 1 - EVALUATION	
	SELF EVALUATION	ASSISTED EVALUATION
demand		
supply		
staff		

	Stop 2 - DESIGN & FORMALIZATION		
	DESIGN	SELECTION	FORMALIZATION
demand			
supply			
staff			

	Stop 3 - REALIZATION			
	TRAINING	ASSESSMENT	MEDIATION	QUALITY ASSURANCE
demand				
supply				
staff				

	Stop 4 - VALIDATION			
	FEEDBACK	COMPARISON	MONITORING	CERTIFICATION
demand				
supply				
staff				

Example for Valencia city pilot

Stop 0 - ON-BOARDING

	AWARENESS	INTERACTION
demand	friendly solutions & checklist	citizen school workshops
supply	best practices, regulations, grants, FIs	

Stop 1 - EVALUATION

	SELF EVALUATION	ASSISTED EVALUATION
demand	friendly tool	personal appointment
supply		EPC, design tools, solution templates

Stop 2 - DESIGN & FORMALIZATION

	DESIGN	SELECTION	FORMALIZATION
demand		registries & lists	contract templates
supply	technical solutions & checklist		

Stop 3 - REALIZATION

	TRAINING	ASSESSMENT	MEDIATION	QUALITY ASSURANCE
demand	micro-training workshops	workplan checklist	citizen school personal appointment	follow-up report & questionnaire
supply	evaluation for registries & lists	workplan template		

Stop 4 - VALIDATION

	FEEDBACK	COMPARISON	MONITORING	CERTIFICATION
demand	satisfaction/ complaints/ sharing questionnaires	friendly tool, EPC 2 best practices	before-after 2 best practices	best practices
supply				

Figure 45.- customer journey & functionalities (Valencia city pilot)

B. Your customer Journey

Now we go stop by stop, taking into account each stop objectives and goals and risks to avoid (see **¡Error! No se encuentra el origen de la referencia.**), and trying to understand the definition of each functionality needed for each step as a touchpoint, since the transition from one step to the next is crucial. The points of **interaction** between the customer and the Citizen Hub are the so-called 'touchpoints. The touchpoints link directly to the experience of the customer in each step of the journey. Each step has its own drivers and barriers which show the reasons for the potential customer to continue or to quit the process.

On each the next tables, fill the **functionalities** you intend to provide on each step, and, if any, describe the **existing tool or mechanism** that you can use to deliver that functionality (in blue fonts), or describe the way you would like to provide the service, when you do not have an existing tool (in red fonts). Red functionalities are your service menu **gaps**, and you will need to further work on finding out a way to deliver that service, so to prevent customers to dropout the process.

	Stop 0 - ON-BOARDING			
	AWARENESS		INTERACTION	
demand				
supply				
staff				
	Functionalities	Tools	Functionalities	Tools
	To T3.6 & T4.7 Platform functionalities definition & implementation			

For the onboarding phase you will count on the tools _____
_____
_____
_____
_____
_____ to help users go to the next step.

(To T4.7 Platform functionalities implementation)

At the other end, you need to find out how to overcome the lack of resources for _____
_____
_____
_____
_____
_____ and avoid users to dropout the process.

(To T3.6 Platform functionalities definition)

Example for Valencia city pilot

		Stop 0 - ON-BOARDING			
		RAISING AWARENESS		INTERACTION	
		Functionalities	Tools	Functionalities	Tools
ACTORS	Demand side	Repository of user-friendly material (guides, videos, etc.) to raise awareness about the benefits of retrofitting, sustainability and circularity concepts, etc.	**Some of the videos in:** https://www.turnkey-retrofit.eu/photos-and-videos/album-1/	Contact with technicians / other demand-side actors to solve technical doubts / ask about their experiences	**LISTS OF PROFESSIONALS. Chartered architects:** https://www.coacv.org/es/arquitectos/arquitectos-coacv/ **Trained in retrofitting/specific areas:** https://www.five.es/formacion/listados-de-profesionales/
		Single portal centralizing the regulations in force to know the legal framework	**To be incorporated in a user-friendly way: REGULATIONS AT NATIONAL LEVEL:** https://www.mitma.gob.es/arquitectura-vivienda-y-suelo/normativa **REGULATIONS AT REGIONAL LEVEL:** https://habitatge.gva.es/es/web/vivienda-y-	Direct contact with corresponding authorities to solve doubts about the legal framework	**Tool for communication** between demand side and OSS staff **on demand**
		Single portal centralizing the available subsidies for standard actions (simulator?)	**SUBSIDIES AT REGIONAL LEVEL (possibility of include them in form of pre-test/simulator?):**	Direct contact with corresponding authorites to solve doubts about available incentives	**Tool for communication** between demand side and OSS staff **on demand**
		Single portal centralizing financial institutions with specific products for retrofitting, also aimed at homeowners' associations (pre-test on financing options?)	**LIST OF FIs AT NATIONAL LEVEL (possibility of include this in form of a pre-test/simulator?):** https://www.idae.es/ayudas-y-financiacion/para-la-rehabilitacion-de-edificios/programa-pree-rehabilitacion-energetica-de/prestamos-para-complementar-	Direct contact financial entities to solve doubts about financing	**Tool for communication** between demand side and OSS staff **on demand**
	Supply side	Repository of user-friendly material (guides, videos, etc.) to know demand side needs	**CIRCULARITY EVALUATION. Dwelling scale:** https://www.circularhomes.eu/circularity-tool-homes/ **Building scale:** https://www.circularhomes.eu/circularity-tool-buildings/	Direct contact with interested demand-side actors to know their profiles, needs & preferences	**Forum/tool for communication between demand and supply sides organised by themes** (energy consumption, dwelling/building needs, financing)
		Single portal centralizing the regulations in force to know the legal framework	***Same as for the demand side***	Direct contact with corresponding authorities to solve doubts on building regulations	**Tool for communication** between supply side and OSS staff **on demand**
		Single portal centralizing the available subsidies for standard actions	***Same as for the demand side***	Direct contact with corresponding authorities to solve doubts on available subsidies	**Tool for communication** between supply side and OSS staff **on demand**
		Single portal centralizing financial institutions with specific products for retrofitting, also aimed at homeowners' associations	***Same as for the demand side***	Direct contact with corresponding financial entities to solve doubts about financing products	**Tool for communication** between supply side and OSS staff **on demand**
	Staff			Direct contact with interested demand-side actors to know their technical needs and the feasibility of interventions	**Tool for communication** between demand side and OSS staff **on demand**
				Direct contact with supply-side actors to know technical solutions available, innovation, feasibility, ranges of prices, etc.	**Tool for communication** between supply side and OSS staff **on demand**
				Direct contact with corresponding authorities to solve doubts on available subsidies	**Tool for priority communication** between OSS staff and Public Administration
				Direct contact with financial entities to solve doubts about financing products	**Tool for priority communication** between OSS staff and Financial Institutions

Table 11.- ES pilot functionalities, services and tools for stop 0 (Valencia city pilot)

Now for the next stop, remember, fill the **functionalities** you intend to provide on each step, and, if any, describe the **existing tool or mechanism** that you can use to deliver that functionality (in blue fonts), or describe the way you would like to provide the service, when you do not have an existing tool (in red fonts). Red functionalities are your service menu **gaps**, and you will need to further work on finding out a way to deliver that service, so to prevent customers to dropout the process.

	Stop 1 - EVALUATION			
	AUTOEVALUATION		ASSISTED EVALUATION	
demand				
supply				
staff				
	Functionalities	Tools	Functionalities	Tools
	To T3.6 & T4.7 Platform functionalities definition & implementation			

For the evaluation phase you will count on the tools _____
_____
_____
_____
_____
_____
_____ to help users go to the next step.

(To T4.7 Platform functionalities implementation)

At the other end, you need to find out how to overcome the lack of resources for _____
_____
_____
_____
_____
_____
_____ and avoid users to dropout the process.

(To T3.6 Platform functionalities definition)

Example for Valencia city pilot

		Stop 1 - EVALUATION			
		AUTOEVALUATION		ASSISTED EVALUATION	
		Functionalities	TT/SS/AAs	Functionalities	TT/SS/AAs
ACTORS	Demand side	On-line survey to know self-consumption	**DWELLING SCALE:** https://www.five.es/productos/herramientas-on-line/test-de-consumo-energetico/ **BUILDING SCALE:** https://app.enerfund.eu/	Virtual assistance from experts (from supply side to demand side; from staff of the OSS offices to demand side; between actors on the supply side)	**Forum/tool for communication between demand and supply sides organised by themes (energy consumption, dwelling/building needs, financing)** **Forum/tool for communication between demand and supply sides organised by themes** (energy consumption, dwelling/building needs, subsidies & financing, legal framework)? **Examples:** https://preguntas.habitissimo.es/rehabilitacion-edificios https://www.soloarquitectura.com/foros/#promotores-y-propietarios.44
		On-line user-friendly information to know dwelling basic characteristics/needs	**BUILDING SCALE:** http://webtool.building-typology.eu/#bm		
		On-line survey to know both self-consumption and dwelling basic characteristics/needs, with additional information on comfort, etc.	**DWELLING & BUILDING SCALE: Labelling wizard**: https://tar-labeling.web.app/#/ **Morphological design wizard:** https://tar-		
		On-line user friendly information to know energy efficiency potential measures & costs	**DWELLING SCALE:** http://www.five.es/espacio-ciudadano/vivienda-turistica/autoevaluacion-vt/ **DWELLING & BUILDING SCALE:** https://www.solutions4renovation.eu/es/ **BUILDING SCALE**: https://4rineu.eu/wp-		
	Supply side			Design tools based on costs	**BUILDING SCALE (accessibility):** https://www.five.es/productos/herramientas-on-line/ascensores/ **DWELLING SCALE (bathrooms & kitchens):** https://www.five.es/productos/herramientas-
				On-line survey to perform an energy calculation and a financial calculation	**BUILDING SCALE:** **Pro-design wizard:** https://bramo.eu/tar-lrvl-8/public/wizard-pro **Public wizard:** https://www.triple-a-reno.eu/1.1.0/public/wizard
				On-line survey / presential interview to know users consumption & behaviour	
				On-line survey / on-site evaluation to know dwelling basic characteristics/needs	
	Staff				

Table 12.-ES pilot functionalities, services and tools for stop 1 (Valencia city pilot)

Same for the next step:

	Stop 2 - DESIGN & FORMALIZATION					
	DESIGN		SELECTION		FORMALIZATION	
demand						
supply						
staff						
	Functionalities	Tools	Functionalities	Tools	Functionalities	Tools
	To T3.6 & T4.7 Platform functionalities definition & implementation					

For the design and formalization phase you will count on the tools _____
_____
_____
_____
_____ to help users go to the next step.

(To T4.7 Platform functionalities implementation)

At the other end, you need to find out how to overcome the lack of resources for _____
_____
_____
_____
_____ and avoid users to dropout the process.

(To T3.6 Platform functionalities definition)

Example for Valencia city pilot

		Stop 2 - DESIGN & FORMALIZATION					
		DESIGN		SELECTION		FORMALIZATION	
		Functionalities	TT/SS/AAs	Functionalities	TT/SS/AAs	Functionalities	TT/SS/AAs
ACTORS	Demand side			User-friendly comparator to ask for/compare offers/quotations	https://reformanerr.com/presupuesto/ https://www.habitissimo.es/presupuestos/reformas	Tool allowing the generation of a user-friendly contract based on the previous selection, with a clear	Beyond providing a **standard contract template** (different for each type of intervention) **and/or advice**, makes it
				Directory of "neutral" technicians (just involved in assessment and certification) for external technical advice, facilitating decision-making	**As in *Stop 0 - Interaction*, LISTS OF PROFESSIONALS. Chartered architects:** https://www.coacv.org/es/arquitectos/arquitectos-coacv/ **Trained in retrofitting/specific areas:** https://www.five.es/formacio		
				Single portal centralizing the available subsidies and the corresponding requirements	**As in *Stop 0 - Raising awareness*, SUBSIDIES AT REGIONAL LEVEL (possibility of include them**		
				Simulator unifying available/combinable grants and financing options to know			
	Supply side	As a basis: platform with evaluation results (from autoevaluation / assisted evaluation)	**Associated with the previous evaluation phase**, since it is based on it			Tool allowing the generation of a user-friendly contract based on the previous design proposal, with a clear definition of the provided services	***Same as for the demand side***
		Single portal centralizing the regulations in force to know the legal framework	**REGULATIONS AT NATIONAL LEVEL:** https://www.mitma.gob.es/arquitectura-vivienda-y-suelo/normativa **REGULATIONS AT**				
		Evaluation form/check-list to check compliance with regulations	**Summary of current regulations** in the form of a checklist / **Platform to allow**				
		Information on standard solutions adapted to the local context	Sheets under development by IVE **Renovation package sheets**: https://4rineu.eu/wp-content/uploads/2021/02/4Ri				
	Staff	Methodical and standardized verification procedure (evaluation form/check-list) to	**Platform to allow verification of documentation** uploaded by			Tool allowing the generation of a document ensuring the legal compliance of the project	***Same as for the demand side***
		Evaluation tool to facilitate the corrections of errors/documentation completion in the case of non-compliance (generating user-	**Platform to allow verification of documentation** uploaded by the Supply Side				

Table 13.- ES pilot functionalities, services and tools for stop 2 (Valencia city pilot)

Same for the next step:

	Stop 3 - REALIZATION							
	TRAINING		ASSESSMENT		MEDIATION		QUALITY ASSURANCE	
demand								
supply								
staff								
	Functionalities	Tools	Functionalities	Tools	Functionalities	Tools	Functionalities	Tools
	To T3.6 & T4.7 Platform functionalities definition & implementation							

For the realization phase you will count on the tools _____
_____
_____
_____
_____ to help users go to the next step.

(To T4.7 Platform functionalities implementation)

At the other end, you need to find out how to overcome the lack of resources for _____
_____
_____
_____
_____ and avoid users to dropout the process.

(To T3.6 Platform functionalities definition)

Example for Valencia city pilot

		Stop 3 - REALIZATION							
		TRAINING		ASSESSMENT		MEDIATION		QUALITY ASSURANCE	
		Functionalities	TT/SS/AAs	Functionalities	TT/SS/AAs	Functionalities	TT/SS/AAs	Functionalities	TT/SS/AAs
ACTORS	Demand side	Workshops / Guidelines/tips to reduce/optimize energy consumption based on the habits of the users	Oficina de la energia workshops and training days	Software allowing the generation of a maintenance programme for existing residential buildings.	https://www.five.es/productos/herramientas-on-line/pomees/	Directory of "neutral" technicians (just involved in assessment and certification) for extra technical support, in case of problems with contracted professionals			
						Directory of legal advisors for legal support, in case of problems (works/building permits/bureaucracy, etc.)			
						User-friendly information about the legal procedures; forms allowing direct submission of documentation			
	Supply side	To know the operation and installation of the demanded solutions: virtual classroom with video-tutorials; possibility to request face-to-face tutoring	**White-collar workers:** https://www.five.es/formacion/ **Blue-collar workers (official training/free courses):** https://www.fundacionlaboral.org/	Evaluation procedures to check progress in terms of time and quality, to quickly and effectively follow up on works	**iBRoad tools: Building Renovation Roadmap & Logbook for energy auditors**: https://ibroad-project.eu/downloads/REPORTD42 / https://ibroad-project.eu/downloads/REPORTD43	Calendar for requesting appointments (by the demand side); control of the time dedicated to mediation, to optimize the time spent on mediation with demand-side		Evaluation procedures, including steps to be followed and main elements to be checked, for external assessment to ensure the quality of works	
		To stay up to date on the latest energy renovation solutions: periodic newsletter summarizing the latest solutions available	**Newsletter** for those professionals (produced by OSSs staff) included in the lists?	Form to include information during evaluation visits and results (for authorizing payments)	http://italiainclassea.enea.it/condomini4-0/	Forms for direct contact to corresponding bodies, allowing information upload, view of the status of procedures, etc., to optimize the time spent on legal procedures		Form to include information during evaluation visits and results (quality of works) to centralize supporting documents of the work status at each stage (photos, etc.)	**BUILT2SPEC Tool: Energy Efficiency Quality Checks:** https://built2spec-project.eu/tools/energy-efficiency-quality-checks/
		To stay up to date on changes in the legislative framework/procedures: notification board including updates	**Newsletter** for those professionals (produced by OSSs staff) included in the lists?	Platform to centralize supporting documents of the work status at each stage (photos, etc.)		Tool showing in real time information on payments (status of payments, authorisations, dates of receipts, etc.)		Real-time updating of the assessment results, to offer demand side real-time information on the status of works	
				Real-time updating of the assessment results, to offer demand side real-time information on the status of works					
	Staff	To stay up to date on the latest energy renovation solutions: periodic newsletter summarizing the latest solutions available	**Newsletter** for professionals included in the lists of professionals? / **On-line training**?	Platform summarizing all the previous information provided by the supply side	OSSs staff work as external 'auditors' of the professionals performing the works	User-friendly forms, allowing direct submission of documentation, making procedures more accessible to minimise the time spent on resolving queries			
		To stay up to date on changes in the legislative framework/procedures: notification board including updates	**Newsletter** for OSSs staff directly from the public administration / **Specific training days**			Instant alerts tool for accelerating communication procedures and timeframes			
						Access to a platform centralizing all project related documentation to avoid intermediate steps and speed up error correction / documentatin submission processes			

Table 14.- ES pilot functionalities, services and tools for stop 3 (Valencia city pilot)

And for the final step:

	Stop 4 - VALIDATION							
	FEEDBACK		COMPARISON		MONITORING		CERTIFICATION	
demand								
supply								
staff								
	Functionalities	Tools	Functionalities	Tools	Functionalities	Tools	Functionalities	Tools
	To T3.6 & T4.7 Platform functionalities definition & implementation							

For the validation phase you will count on the tools _____
_____
_____
_____
_____ to help users go to the next step.

(To T4.7 Platform functionalities implementation)

At the other end, you need to find out how to overcome the lack of resources for _____
_____
_____
_____
_____ and avoid users to dropout the process.

(To T3.6 Platform functionalities definition)

Example for Valencia city pilot

		Stop 4 - VALIDATION							
		FEEDBACK		COMPARISON		MONITORING		CERTIFICATION	
		Functionalities	TT/SS/AAs	Functionalities	TT/SS/AAs	Functionalities	TT/SS/AAs	Functionalities	TT/SS/AAs
ACTORS	Demand side	Platform for complaints/notifying faults in works, with response time margins depending on the type of feedback (post-installation issues, works fixing, etc.)	**Tool for communication between demand and supply sides organised by themes** (energy consumption, dwelling/building needs, financing)	Tool allowing the graphical comparison of the consumption before/after the works	Based on **evaluation & assisted evaluation** tools form stage 1	Platform displaying real-time monitoring data in a user-friendly way allowing objective data comparison (previous step)	**MOBISTYLE RESULTS Dashboard (different kind of users):** https://www.mobistyle-project.eu/en/mobistyle/results/mobistyle-dashboard **Game (residential users):** https://www.mobistyle-project.eu/en/mobistyle/results/mobistyle-game	Information on quality certification system awarded to residential buildings with significant improvements over the mandatory minimums	***Information on the system employed by the supply side*** **BUILDING SCALE:** https://www.five.es/certificacion-edificios/viviendas/
	Supply side			Tool allowing the comparison of the building elements behaviour before/after the works	Based on **evaluation & assisted evaluation tools** form stage 1	Platform displaying real-time monitoring data allowing objective data comparison (previous step)	**MOBISTYLE RESULTS Expert tool:** https://www.mobistyle-project.eu/en/mobistyle/results/mobistyle-expert-tool	Quality certification system awarded to residential buildings with significant improvements over the mandatory minimums	**BUILDING SCALE:** https://www.five.es/certificacion-edificios/viviendas/
								Tool simplifying the process by using already recorded data and including guidelines to get an official certification of the obtained improvements	
	Staff			Tool allowing the comparison of the building elements behaviour before/after the works	Based on **evaluation & assisted evaluation tools** form stage 1	Platform displaying real-time monitoring data allowing objective data comparison (previous step)	***Same as for the supply side***	Quality certification system awarded to residential buildings with significant improvements over the mandatory minimums	***Same as for the supply side***

Table 15.- ES pilot functionalities, services and tools for stop 4 (Valencia city pilot)

StH Document 4. Supporting services map

More information available in:

D2.4.- Mapped suitable protocols and methods for quality control of the renovation works (including skills definition) and for buildings performance monitoring.

First, keep in mind that this methodology aims to draft a set **supporting services** for ensuring quality of works suited for all the itineraries designed according to previous tasks selected targets and solutions, at the moment of its implementation and for a potential roll-out.

This checklist deals therefore with the mapping of suitable protocols and methods for quality control of the renovation works (including skills definition) and for buildings performance monitoring, this is, the **already available methods, tools and services suitable for the renovation process**, beyond the holistic home renovation personal assistance offered by the Citizen Hub, such as:

- quality control of the renovation works
- definition of skills
- energy, comfort and IEQ performance monitoring (and data processing and display in an attractive and understandable way)

Furthermore, it is investigated what **other local activities and organizations are applicable for efficient Citizen Hub roll-out** (e.g., existing energy or housing offices).

A. The existing resources in place

Before starting this journey, have Deliverable 2.4 Section 3 at hand.

This section is twofold, for each category of supporting services: in one hand, the existing initiatives at EU level that can be used in the ecosystem will be listed (see Section 3 of the Deliverable 2.4), and on the other hand, the existing local initiatives or in-house know-how are put together.

A. 1. Training

> The objective of mapping the existing and applicable training resources is to **enhance** the quality of the renovation works demanded by the public and assisted by the OSS services in the elaboration stage, where external contracting is facilitated.

First of all, think of the **purpose** of your mapping training resources:

- □ Is it for ensuring the understandability of the proposed quality solutions?
- □ Is it for ensuring the quality of the designed solutions?
- □ Is it for ensuring the quality of the implemented solutions?

First option focuses on demand side and onboarding, evaluating stages; second and third focus on supply side for both design and construction stages, and affect the elaboration stage services provided by the Citizen Hub.

Purpose	Focus	Stages				
a)	Demand					
b)	Supply					
c)	Supply					
Other?						
	To Service Model					

Now, think of the training **sources** available at your context level in order to know better your demand and/or supply side sources of (in)formation when intending to find out or perform the best interventions in the residential building sector (such as YouTube videos, secondary school specialization, professionals' associations training, private academies…):

_____
_____
_____
_____
_____

Now, look at next table, which intends to summarize the existing supporting services related to training, listed above, and classify them keeping in mind why will you be able to **capitalize** them in your service menu definition, this is, because:

- they come from EU projects applicable in your context,
- they belong to you or your partners, or
- they are already working in your area and can find complementarities for both entities.

This is important because the agreements for using them will be different in the different options.

Remember: these are resources in place, regarding training and capacitation, for ensuring quality of the renovation works facilitated by the Citizen Hub through e.g., the professionals, installers and/or contractors registries.

EU (From D2.4 section 3 or others)	In-house (Partners resources)	local (Geographically available initiatives)
To Service Menu		To pop-up

Example for Valencia city pilot

EU (applicable results)	**In-house** (partners resources)	**local** (initiatives)
PROF-TRAC	IVE's training offer	Construction Labour Foundation (FLC)
BIMplement	VCE's training workshops	
TripleA-reno		
BUSLeague		
BUS-GoCircular		

Table 16.- Existing and applicable training resources in place (Valencia city pilot)

A. 2. Certification

The objective of mapping the existing and applicable certification schemes in place is to **proof** the quality of the solutions proposed and renovation design, works and results facilitated through the OSS services through an independent body (impartial third person).

First of all, think of the **purpose** of your mapping certification resources:

- □ a) Is it for proofing the quality of the proposed solutions?
- □ b) Is it for proofing the quality of the designed solutions?
- □ c) Is it for proofing the quality of the implemented solutions?

First option focuses on demand side and onboarding, evaluating stages; second and third focus on supply side for both design and evaluation stages, and affect the elaboration stage services provided by the Citizen Hub.

Purpose	Focus	Stages				
a)	Demand					
b)	Supply					
c)	Supply					
Other?						
	To Service Model					

Now, think of the certification **sources** available at your context level in order to know better your demand and/or supply options to get or provide trusted services (such as mandatory schemes or regulations, voluntary labels or certifications, self-assessment tools, questionnaires or tests…):

_____

_____

_____

Now, look at next table, which intends to summarize the existing supporting services related to certification, listed above, and classify them keeping in mind why will you be able to **capitalize** them in your service menu definition, this is, because:

- they come from EU projects applicable in your context,
- they belong to you or your partners, or
- they are already working in your area and can find complementarities for both entities.

This is important because the agreements for using them will be different in the different options.

Remember: these are resources in place regarding certification of the quality of the renovation works facilitated by the Citizen Hub through e.g., the solution packs, including products and materials, the energy assessment or the results evaluation.

EU (From D2.4 section 3 or others)	In-house (Partners resources)	local (Geographically available initiatives)
To Service Menu		To pop-up

Example for Valencia city pilot		
EU (applicable results)	**In-house** (partners resources)	**local** (initiatives)
HAPPEN	IVE Certification Body	Residential Building Evaluation Report (IEE.CV)
		Quality Register in the Built Environment

Table 17.- Existing and applicable certification schemes in place (Valencia city pilot)

A. 3. Monitoring

The objective of mapping the existing and applicable monitoring protocols available in place is to **demonstrate** the quality of the renovation works facilitated through the OSS services by the 'seeing is believing' mechanism.

In this case, your **purpose** focuses on the demand side and tackles their (in)ability to read complex data, indicators or results from certifications documents or regulations and the (lack of) time to train. This mechanism is based on the simple before-after comparison of the real performance of the homes.

Purpose	Focus	Stages				
unique	Demand					
Other?						
	To Service Model					

Now, think of the monitoring **sources** available at your context level in order to know better your demand side options to get friendly, understandable, relatable information about their homes' performance (such as stand-alone devices, services related to energy supply contracts or specialized companies…):

_____
_____
_____

Now, look at next table, which intends to summarize the existing supporting services related to monitoring, listed above, and classify them keeping in mind why will you be able to **capitalize** them in your service menu definition, this is, because:

- they come from EU projects applicable in your context,
- they belong to you or your partners, or
- they are already working in your area and can find complementarities for both entities.

This is important because the agreements for using them will be different in the different options.

Remember: these are resources in place regarding monitoring of the improvements provided by the renovation works facilitated by the Citizen Hub through the comparison before-after renovation, this is, from the beginning to the end of the process through e.g., the (pre)evaluation and (post)validation services.

EU (From D2.4 section 3 or others)	In-house (Partners resources)	local (Geographically available initiatives)
To Service Menu		To pop-up

Example for Valencia city pilot		
EU (applicable results)	**In-house** (partners resources)	**local** (initiatives)
SSO	Energy consumption test	Through VCE's users advisory services
TripleA-reno	Self-assessment tool for tourist homes	
DRIVE 0		

Table 18.- Existing and applicable monitoring protocols and services in place (Valencia city pilot)

B. The Citizen Hub supporting services proposal

The main objective in this step is to list and allocate the analysed existing supporting tools and protocols in the corresponding stage of the OSS customer journey service offer.

B. 1. Services Model

The objective of defining a supporting services model is to get a clear view of the **targets** and purposes of the offered services that guarantee the quality of the works facilitated through the OSS services and on which **stages** of the process

Now, remember your **purpose** for collecting supporting services on each domain: training, certifying, monitoring; and define your quality check model, by just **colouring** the cells according to your needs:

Stage:			Training	Certification	Monitoring
0 - onboarding					
1 – evaluation/ design					
2 – elaboration/ formalization					
3 - construction					
4 - validation					
Focus:	Demand	Supply	To Service Menu		

B. 2. Services Menu

The objective of defining a supporting services proposal is to get a clear view of the available and applicable existing **resources** helping ensure the quality of the works facilitated through the OSS services according to your model – and identify the **gaps**!

Now, use the previously coloured table and fill the coloured cells with the **best fitting resources** that you can capitalize in any way and therefore offer through your citizen hub implementation. It is considered that you will use the most aligned/appropriate existing resources in the different stages of the Customer Journey according to the previous steps.

Stage:			Training	Certification	Monitoring
0 - onboarding					
1 – evaluation/ design					
2 – elaboration/ formalization					
3 - construction					
4 - validation					
Focus:	Demand	Supply	To Implementation strategy (& platform functionalities) - gaps to pop-up		

This table will help design the implementation strategy and local platform functionalities of your local Citizen Hub according to the customer journey and identify functionalities or services gaps for which alternatives need to be provided.

Example for Valencia city pilot

stage	Training	Certification	Monitoring
0 - onboarding	Mentioned EU projects	EPC improvements	IVE tools for self-assessment
1 - evaluation	IVE training offer	suggestions	SSO / TripleA-reno / DRIVE 0
2 - elaboration	VCE training offer	Quality Register	
3 - construction	FLC training offer/ BUS suite	HAPPEN Vol. Certif. Scheme	
4 - validation	IVE training offer	IVE Certification Body	idem stage 0

Table 19.- Spanish OSS supporting services proposal (Valencia city pilot)

C. The Citizen Hub roll-out proposal

Finally, the objective of this step is to not only reviewing the existing supporting services available and applicable to offer and/or use within the OSS services menu, but also scouting the existing local sister initiatives that could host temporarily or eventually part or the whole OSS services in areas out of the Citizen Hub territorial or functional competences, in order to expand its reach.

C. 1. Decentralization strategy (pop-up)

The objective of decentralization based on existing sister initiatives is to **extend reach** of the OSS services and facilitate access, to maximize project impact

First of all, be aware that some initiatives or services have been listed in previous steps, since they provide specific services related to training, certifying or monitoring, but there might be others not so specific but **rooted, popular or trusted** sources of information regarding dwelling or energy issues (e.g. energy cooperatives, neighbours associations…)

Starting from previous steps local (geographically available) initiatives, try to fill the table below to find out which are your potential allies depending on:

- the services they can provide according to their usual activities and actual spaces (remember gaps from previous step!),
- the targeted reach they enable,
- the proposed schedule for public attention, and
- the mutual benefits enabling the collaboration.

Ask your partners and do not limit to initiatives listed above: there might be others, complementary to your designed Citizen Hub concept!

initiative	Stage/ What (Services to be provided)	Territory/ Where (Geographical scope)	Periodicity/ When (Temporal scope)	Benefits/ Why (Collaboration framework)
To Implementation strategy (and platform functionalities)				

This table will help design the implementation strategy and local platform functionalities of your local Citizen Hub according to the customer journey and the identified functionalities or services gaps.

Example for Valencia city pilot

initiative	**Stage/ What** (Services to be provided)	**Territory/ Where** (Geographical scope)	**Periodicity/ When** (Temporal scope)
XALOC	Integral service for building retrofitting	Valencia region	First offices created in 2020 Decree 199/2021 signed in Dec.21
OTEA	Assistance on energy saving, energy efficiency, and renewable self-consumption	Valencia region	Launch in Dec.21 Operation planned until 2023
Other physical offices	Integral services	Other ES regions	See D.2.1 (*The previous experiences,* p.7-8)
Web tools/platforms	Search of professionals Requesting quotes	ES national context	See D.2.1 (*The previous experiences,* p.8-9)
Professionals' directories or associations	Misc.: provision of services, promotion of retrofitting, search of professionals, etc.	ES national context	See D.2.1 (*The previous experiences,* p.9)
In-store assistance	Intermediaries between users and professionals	Some ES regions	See D.2.1 (*The previous experiences,* p.9)

Table 20.- Spanish OSS roll-out proposal (Valencia city pilot)

StH Document 7. Staff training design methodology

More information available in:

D3.6. Training program for the Citizen hub staff in the two pilots

This document will help your Municipality or Region map and design the skills need for your staff, the existing training resources and the training program proposal in your context and implement your own Citizen Hub. It is structured as a series of tables to be filled in a step-by-step process that will lead to the definition of your own objectives, requirements and modalities for your training program.

The objective of this guide is to design a proper training program for your Citizen Hub staff. To do so, think of the services menu designed in D3.2 (have at hand your results from StH Document 6), and follow next steps.

A. Skills

Staff skills needed to deliver the best service to citizens includes assistance in the whole customer journey, this is, the 5 stops, and most of their sub-steps, according to the objectives and functionalities designed according to D3.2 (have at hand your results from StH Document 6).

Stop 0 – onboarding objectives for my citizen hub are to _____
_____
_____
_____
_____

Therefore, staff needs to know, for each sub-step, how to:

	Stop 0 - ON-BOARDING	
	AWARENESS	INTERACTION
profile	□ Customer service □ Legal □ Technician □ Other	□ Customer service □ Legal □ Technician □ Other

Stop 1 – evaluation objectives for my citizen hub are to _____

_____

_____

_____

_____

Therefore, staff needs to know, for each sub-step, how to:

	Stop 1 - EVALUATION	
	SELF EVALUATION	ASSISTED EVALUATION
profile	□ Customer service □ Legal □ Technician □ Other	□ Customer service □ Legal □ Technician □ Other

Stop 2 – elaboration objectives for my citizen hub are to _____

_____

_____

_____

_____

Therefore, staff needs to know, for each sub-step, how to:

	Stop 2 - DESIGN & FORMALIZATION		
	DESIGN	SELECTION	FORMALIZATION
profile	□ Customer service □ Legal □ Technician □ Other	□ Customer service □ Legal □ Technician □ Other	□ Customer service □ Legal □ Technician □ Other

Stop 3 – realization objectives for my citizen hub are to _____

_____

_____

_____

_____

Therefore, staff needs to know, for each sub-step, how to:

	Stop 3 – REALIZATION			
	TRAINING	ASSESSMENT	MEDIATION	QUALITY ASSURANCE
profile	□ Customer service □ Legal □ Technician □ Other	□ Customer service □ Legal □ Technician □ Other	□ Customer service □ Legal □ Technician □ Other	□ Customer service □ Legal □ Technician □ Other

Stop 4 – validation objectives for my citizen hub are to _____

_____

_____

_____

_____

Therefore, staff needs to know, for each sub-step, how to:

	Stop 4 - VALIDATION			
	FEEDBACK	COMPARISON	MONITORING	CERTIFICATION
profile	□ Customer service □ Legal □ Technician □ Other	□ Customer service □ Legal □ Technician □ Other	□ Customer service □ Legal □ Technician □ Other	□ Customer service □ Legal □ Technician □ Other

Remember that skills are not distributed as 'watertight compartments', and they all might permeate the services provided on each stop (meaning that some skills are needed in different stops and steps).

Example for Valencia city pilot

Staff

Stop 0 - ON-BOARDING	
AWARENESS	INTERACTION
	schedulling, **communication**, prioritizing, channeling…

Stop 1 - EVALUATION	
AUTOEVALUATION	ASSISTED EVALUATION
	understanding **tools** available, in order to solve doubts or redirect to corresponding professional

Stop 2 - DESIGN & FORMALIZATION		
DESIGN	SELECTION	FORMALIZATION
knowledge of regulations and requirements for proper **guidance** and solve doubts		**validation** of the documents before starting works

Stop 3 - REALIZATION			
TRAINING	ASSESSMENT	MEDIATION	QUALITY ASSURANCE
uptodateness	follow-up, **registering** of activities and documents	**deadlines**, doubts, direct submissions, communication, meetings…	

Stop 4 - VALIDATION			
FEEDBACK	COMPARISON	MONITORING	CERTIFICATION
	understanding **tools** available, in order to solve doubts or redirect to corresponding professional	understanding **tools** available, in order to solve doubts or redirect to corresponding professional	understanding **tools** available, in order to solve doubts or redirect to corresponding professional

Figure 46.- staff customer journey, services and training needs (Valencia city pilot)

B. Contents

The project has distributed all the detected skills needs in 4 learning modules, which can be addressed to the whole Citizen Hub as a service provider team or to specific profiles within the team. Please fit your previous section needs for skills on each of the modules, and colour them according to their best fit modalities as defined in the last row:

step	**M1: Context & framework:** local legislation, subsidies and grants, competences, etc…	**M2: Customer journey:** services' menu, touchpoints, dependencies, etc…	**M3: Tools & services:** Specific materials for supporting tools used within the customer journey stops	**M4: Soft skills:** Communication skills and basic customer service skills
AWARENESS				
INTERACTION				
SELF EVALUATION				
ASSISTED EVALUATION				
DESIGN				
SELECTION				
FORMALIZATION				
TRAINING				
ASSESSMENT				
MEDIATION				
QUALITY ASSURANCE				
FEEDBACK				
COMPARISON				
MONITORING				
CERTIFICATION				
Modality	Tailor made training (half) day	Working group	Course	

Remember, the planned teaching formats are:

- **Tailor-made training days.** Through this modality, technicians will be trained in specific contents adapted to their needs to fill the current gaps identified. These training sessions will be organized **around thematic modules** (such as a module on financing, including updated information on subsidies). The training days will be offered in both **face-to-face and on-line formats.**
- **Working groups.** With the main goal of boosting retrofitting through the contagion effect and based on the knowledge/experience of other stakeholders involved in the different stages of the retrofitting process, **face-to-face meetings** for sharing information will be organized. These workshops will be organized **around the specific stages of the customer journey**.
- **Training courses**. These courses will be in **on-line format** and will **focus on technical content**. The contents will cover the initial design phases through to the completion of the works and subsequent use and maintenance.

Example for Valencia city pilot

Staff				
Stop 0 - ON-BOARDING				
AWARENESS	INTERACTION			
	MODULE 4 - Communication			
	MODULE 1 - Best practices			
Stop 1 - EVALUATION				
AUTOEVALUATION	ASSISTED EVALUATION			
	MODULE 3 - Tools			
Stop 2 - DESIGN & FORMALIZATION				
DESIGN	SELECTION	FORMALIZATION		
MODULE 1 - Legislation		MODULE 2 - Service Manual		
MODULE 1 - Procedures		MODULE 2 - Rehabilitation		
Stop 3 - REALIZATION				
TRAINING	ASSESSMENT	MEDIATION	QUALITY ASSURANCE	
MODULE 1 - Procedures	MODULE 2 - Service Manual	MODULE 2 - Service Manual		
Stop 4 - VALIDATION				
FEEDBACK	COMPARISON	MONITORING	CERTIFICATION	
	MODULE 3 - Tools	MODULE 3 - Tools	MODULE 3 - Tools	

Modality	session	Staff
A) Tailored training day		
MODULE 1 - Legislation	1	all
MODULE 4 - Communication	2	all
B) Working groups		
MODULE 2 - Service Manual	3	all
MODULE 2 - Courses	4	all
C) Courses		
MODULE 1 - Best practices	tbd	all
MODULE 1 - Procedures	tbd	all
MODULE 2 - Rehabilitation	tbd	all
MODULE 3 - Tools	tbd	tech

Figure 47.- Modalities and planning (Valencia city pilot)

C. Resources

Now think of the offers available in your context for covering each content needed, and detect (mark in red) needs for customized contents:

Content (From section B)	Training resource (Name)	Provider (Entity name)	Format (Present/ online)	Duration (hours)	Cost (€)
	Gap!				

D. Program

Finally, recap all information and design **your training proposal** (copy & paste as many tables as you need):

Number	Modality	Profiles	Evaluation	Certificate
--	□ Tailor □ Group □ Course	□ Customer □ Legal □ technician	□ Observation □ test	□ Team □ individual
Stops/ steps	**Provider**	**Format**	**Duration**	**Cost**
(From customer journey)	(Entity name)	□ Present □ Online	(hours)	(€)
NAME Description…				
			Participants	**Total cost**
			(number)	(€)

Number	Modality	Profiles	Evaluation	Certificate
--	□ Tailor □ Group □ Course	□ Customer □ Legal □ technician	□ Observation □ test	□ Team □ individual
Stops/ steps	**Provider**	**Format**	**Duration**	**Cost**
(From customer journey)	(Entity name)	□ Present □ Online	(hours)	(€)
NAME Description…				
			Participants	**Total cost**
			(number)	(€)

Example for Valencia city pilot

Modality	Main Stages	Profiles	Requirements	Evaluation	Certificate
A) Tailored training half day					
MODULE 1 - Legislation	Design	all	>=1 legal background related to housing and administrative procedures	Observation	Team
Housing renovation: regulation and management context and opportunities An overview of the legal regime of urban regeneration and the planning of actions in the different management areas at three scales is provided: state legislation, regional legislation and local level. Customized training day for municipal technicians on Royal Decree 853/2021 , Direct economic aid for citizens: the purpose is to make them aware of all the aid available from the different administrations so that they can inform them directly; and Economic aid for municipalities: so that they know the aid that is convened at the municipality and how to request them.					
MODULE 4 - Communication	Interaction	all	-	Observation	Team
Soft skills					
B) Working groups - half day					
MODULE 2 - Service Manual	Formalization; Mediation; Assessment	all	>=1 technical backgroung related to building renovation	Observation	Team
Service manual for XALOC network offices Has the purpose of detailing the activities to be carried out by the local and regional administrations adhered to the RED XALOC initiative, which come contained in the collaboration agreement established between these administrations and the Second Vice Presidency and Ministry of Housing and Bioclimatic architecture. Complementary tools derived from the Manual: Operational sheets of the actions; digital material; Graphic and dissemination material; Planning of dissemination campaigns; Training plan for municipal technicians; Data collection sheets These are meetings to share information of interest to municipal technicians on initiatives and experiences carried out in some municipalities related to housing, which serve as experience for the rest of the participants For example: Streamlining and simplification of procedures; Reduction of municipal taxes and fees; Implementation of the IEE CV ordinances; Municipal aid programs					
MODULE 2 - Courses	Evaluation; Validation	all	-	-	-
Energy retrofitting in the framework of the Next Generation funds To be discussed with Citizen Hub staff, related to: Technical tools available for the design and execution of retrofitting; Economic analysis of retrofitting actions: financing and taxation; Retrofitting manager, functions and experiences. Worktable will follow to design the best fitting courses for the specific office team, covering: Aids for the rehabilitation of buildings and homes (Next Generation, personal income tax deductions, IBI and ICIO deductions...), Ad-hoc training course on the tools and protocols of the service offered					
C) Courses					
MODULE 1 - Best practices	Interaction	all	-	-	-
REAL CASES OF ENERGY REHABILITATION OF RESIDENTIAL BUILDINGS 10 hours online Examples of energy rehabilitation processes in different areas are exposed through the exposure of the professionals involved. The ultimate goal is for students to acquire a global vision of the energy rehabilitation process.					
MODULE 1 - Procedures	Training	all	>=1 legal background related to housing and administrative procedures	Test	Individual
REGULATION AND MANAGEMENT OF URBAN REGENERATION 50 hours online In the first place, an overview of the legal regime of urban regeneration and the planning of actions in the different management areas at three scales is provided: state legislation, regional legislation and local level. Second, to obtain a general approach to the management of the project, emphasizing its practical dimension of financing and planning. Additionally, an approach is made to the international scale in urban regeneration.					
MODULE 2 - Rehabilitation Manager	Formalization	all	>=1 technical backgroung related to building renovation	Test	Individual
BUILDING REHABILITATION MANAGEMENT 30 hours online This subject deals with the necessary techniques to carry out the management and control of the different stages of a building rehabilitation action. The content of the course covers the entire rehabilitation process, from the duty of property conservation, the economic estimation of this type of project, the search for financing mechanisms in order to carry out a feasibility analysis and economic-financial profitability. of these actions, and the completion and maintenance of the works.					
MODULE 3 - Tools	Evaluation	customer service	-	Test	Individual
Micro-trainings Short videos (10 -15 minutes) in friendly language about energy Efficiency on residential buildings and renovation strategies, addressed to citizens or non-technical customer service: Introduction to EE-buildings; How to improve the EE; User behaviour; Insulation; Windows; Thermal installations; Existing thermal installations; Lightning; Home appliances; Renewable energies **Energy rehabilitation & Connect to the sun** Intended to users, it is also interesting for new offices staff to learn the basics of energy renovation in these 3-4 hours workshops.					
MODULE 3 - Tools	Design	technician	technical backgroung related to building renovation	Test	Individual
CERMA 5 8 hours online CERMA is an official and free computer program, which has the status of a recognized document, for the Certification of Energy Efficiency of Buildings for private residential use in Spain. This course presents the CERMA program in its latest version (5). The operation of each of the tabs is exposed in a theoretical way, going into the detail of the definition possibilities offered by the program, emphasizing the additional functionalities with respect to the previous version (4.2.5). A series of practical examples of the use of the program are also offered. **TECHNICAL BUILDING CODE** 6.5 hours Presentation and explanation of the novelties of the Technical Building Code after its modification through Royal Decree 732/2019, incorporating a new Basic Energy Saving Document					
MODULE 3 - Tools	Evaluation; Validation	technician	technical backgroung related to building renovation	Test	Individual
The Evaluation Report of the building (IEEV.CV) Characterization of injuries in buildings and writing of the IEEV.CV report Students are provided with sufficient knowledge to prepare this report through the IEEV.CV procedure, specially designed for residential construction, since it is the typology on which the IEE is mostly requested. Likewise, basic knowledge is offered in the field of pathology in construction and accessibility evaluation, addressing the most common aspects in inspection of residential buildings for the drafting of the IEE. This training has been designed under the framework of Component 2 – Housing Rehabilitation and Urban Regeneration Plan of the Recovery, Transformation and Resilience Plan, to facilitate the proper management of European Next Generation funds.					

Table 21.- Valencia Region basic training program (Valencia city pilot)

E. Budget

Now summarize your cost for the **setting up** of the citizen Hub:

Number	Stops/ steps	Name	Participants	Cost
--	(From customer journey)	(name)	(number)	(€)
			€ for set up	

And reserve some budget for regular training **each year**:

Number	Stops/ steps	Name	Participants	Cost
--	(From customer journey)	(name)	(number)	(€)
			€ each year	

And plan your needed **timeline** (hollow the corresponding cell and write the staff profile attending the training). For service continuation, calculate 4 hours per day:

Number	W1	W2	W3	W4	W5	W6	W7	W8

Example for Valencia city pilot

year 1

Modality	h/M	Staff	h	€/h	Cost	W1	W2	W3	W4	W5	W6	W7	W8
A) Tailored training day													
MODULE 1 - Legislation	4	3	12	10	120								
MODULE 4 - Communication	4	3	12	10	120								
B) Working groups													
MODULE 2 - Service Manual	4	3	12	10	120								
MODULE 2 - Courses	4	3	12	10	120								
C) Courses (on-line)													
MODULE 1 - Best practices	10	3	30	8	240								
MODULE 1 - Procedures	50	3	150	8	1200								
MODULE 2 - Rehabilitation	30	3	90	8	720								
MODULE 3 - Tools	10	1	10	8	80								
MODULE 3 - Tools	10	1	10	8	80								
MODULE 3 - Tools	10	1	10	8	80								
Total			**348**		**2880**								

Table 22.- Cost & timeline for set up (Valencia city pilot)

each year

Modality	h/M	Staff	h	€/h	Cost
A) Tailored training day					
MODULE 1 - Legislation	4	3	12	10	120
B) Working groups					
MODULE 2 - Service Manual	4	3	12	10	120
C) Courses (on-line)					
MODULE 3 - Tools	10	1	10	10	100
MODULE 3 - Tools	10	1	10	10	100
MODULE 3 - Tools	10	1	10	10	100
Total			**54**		**540**

Table 23.- Regular training yearly cost (Valencia city pilot)

STEP 5. THE FOLLOW-UP | MONITORING

Q. The Sustainability Strategy

R. The Business Model

S. The Risk assessment

T. The Performance: KPIs, Dashboards, Value

Steps	Sub-steps		Test material	Location of test material/more explanation
5. The follow-up	Q. The Sustainability Strategy		Definition of OSS type	D3.3. Citizen Hub Business model for the two pilots.
	R. The Business Model		Business model canvas	D3.3. Citizen Hub Business model for the two pilots.
	S. The Risk assessment		Risk assessment	D4.5. Action plan, risk assessment and quality assurance of the renovation activities
	T. The Performance	KPIs	Monitoring: KPIs definition	D4.2 Citizen Hub model agreement Citizen Hub model agreement including quality control system for the business model elements and monitoring protocols for evaluation of
		Dashboard	StH Doc 8_Monitoring data templates	D3.8. Monitoring data Plan for the two pilots
		Value (Satisfaction)	Monitoring: Value (satisfaction)	D4.2 Citizen Hub model agreement Citizen Hub model agreement including quality control system for the business model elements and monitoring protocols for evaluation of

Table 24. Test materials and their location in the deliverables for step 5

This step (and its sub-steps) aims to define the way of ensuring the continuation on the mid-long term, measuring success and implementing improvements where needed.

- For sub-step **Q. The Sustainability strategy** the DIY document is **Definition of OSS type,** and it comes from **D3.3. Citizen Hub Business model for the two pilots.**
- For sub-step **R. The Business Model,** the DIY document is the **Business model canvas (BMC) framework.** The explanation of how the BMC is built is available in **D3.3. Citizen Hub Business model for the two pilots.**
- For sub-step **S. The Risk assessment**, the DIY document is the **Risk assessment** applied for each step of the customer journey and it is available in **D4.5. Action plan, risk assessment and quality assurance of the renovation activities**
- Finally, for sub-step **T. The Performance,** three documents are used:
    - KPIs are defined using the **Monitoring: KPIs definition**, extracted from **D4.2 Citizen Hub model agreement Citizen Hub model agreement including quality control system for the business model elements and monitoring protocols for evaluation of partners' activities.**
    - The dashboard and the monitoring data is present in **StH Document 8_Monitoring data templates,** which is part of **D3.8. Monitoring data Plan for the two pilots.**
    - The customer satisfaction KPIs are available in the document **Monitoring: Value (satisfaction),** which is included in the **D4.2.**

The DIY templates and the available examples for Valencia city pilot are also shown below.

Definition of OSS type

Please, fill the following table to define your OSS type regarding the engagement level. Indicate if the OSS includes the presence of technical assistance, contractor training and relations, subsidy offers or links and links to or offers of financing solutions. Based on this data, the OSS can be rated as low, medium, or high touch to pinpoint their engagement level. More information about the definition of the OSS type is available in **D3.3. Citizen Hub Business model for the two pilots**.

Type Public/Private/ Non-profit/ PPP/PPCP	**Target** Single housing/ multifamily housing/ public buildings/ residential buildings/ social housing	**(A)** **Technical assistance** Yes: ✓	**(C)** **Contractor relations** Yes: ✓	**(S)** **Subsidies offers** Yes: ✓	**(F)** **Financing solutions** Yes: ✓

PPP = Public-Private Partnership
PPCP = Public-Private-Citizen Partnership

→ Now, please indicate the combination of letters for your OSS: _____

And now, indicate the corresponding letter combination in the table below to know your type of OSS regarding its engagement level.

1. Low-touch		**2. Medium-touch**			**3. High-touch**
F	A+S	A+C+S	A + C	A+F	A+C+F+(S)

- **Rating of 1. Low-touch** - A program only provides financing, or if it only offers technical advice in combination with subsidy info (and no contracting or financing). These only offer a single or a couple of services to homeowners, which may help to initiate the renovation process but does not facilitate it entirely.
- **Rating of 2. Medium-touch** - Advice, contracting, and subsidies are provided (with no mention of financing); if advice and contracting are offered (no subsidies or financing); or if the OSS provides advice and financing (no contractor relations and/or subsidies). This type of OSS is a medium touch or medium intensity program as it provides homeowners with several resources that may be needed when renovating but lacks some elements to fully support renovation works.
- **Rating of 3. High-touch** - Advice, contracting, and financing is provided (which may or may not include subsidies). This type of OSS is an all-encompassing integrated home renovation platform that offers all of the services potentially needed by homeowners when renovating their properties.

Example for Valencia pilot city and other European OSS programms

Name of OSS	Country	Type	Target	Technical assistance	Contractor relations	Subsidies	Financing
Oficina de la Energia	Spain	Public	Single and multifamily housing	✓	✓	✓	
Hauskunft	Austria	Public	Single and multifamily housing	✓		✓	
RenoWatt	Belgium	Public	Public Buildings	✓		✓	✓
WarmerWonen	Belgium	PPP	Single-family housing	✓	✓		✓
HomeGrade	Belgium	PPP (Non-profit)	Multifamily housing	✓	✓		
Huisdokter	Belgium	Public	Single and multifamily housing	✓	✓		
C Real	Belgium	Non-profit organisation	Single and multifamily housing	✓		✓	✓
EasyCOPRO	Belgium	PPP	Multifamily housing (condominium)	✓	✓	✓	✓

The complete chart for all the programs assessed (64 programs) is available in Annex 1 from D3.3.

Table 25.Comparison chart of examples of European OSS programms.

Business model canvas

In order to determine how the One-Stop-Shop (OSS) can be self-sufficient, a specific business model is necessary. One way to build up a business model in an efficient way is by using the Business Model Canvas (BMC) framework. In concrete, the BMC framework address the following points:

- Value creation which describes how value is created and the sources for this.
- Value delivery which describes how this created value is delivered to the customers.
- Capture of value which describes how the organization generates revenue and profit.

These three categories of value are analysed and designed by organizations using the BMC, shown in Figure below. Moreover, these three categories are acknowledged in academic literature to stress the central role of value in doing business (Richardson, 2008). This is also stressed as the central building block of the BMC, which is the *Value Proposition*.

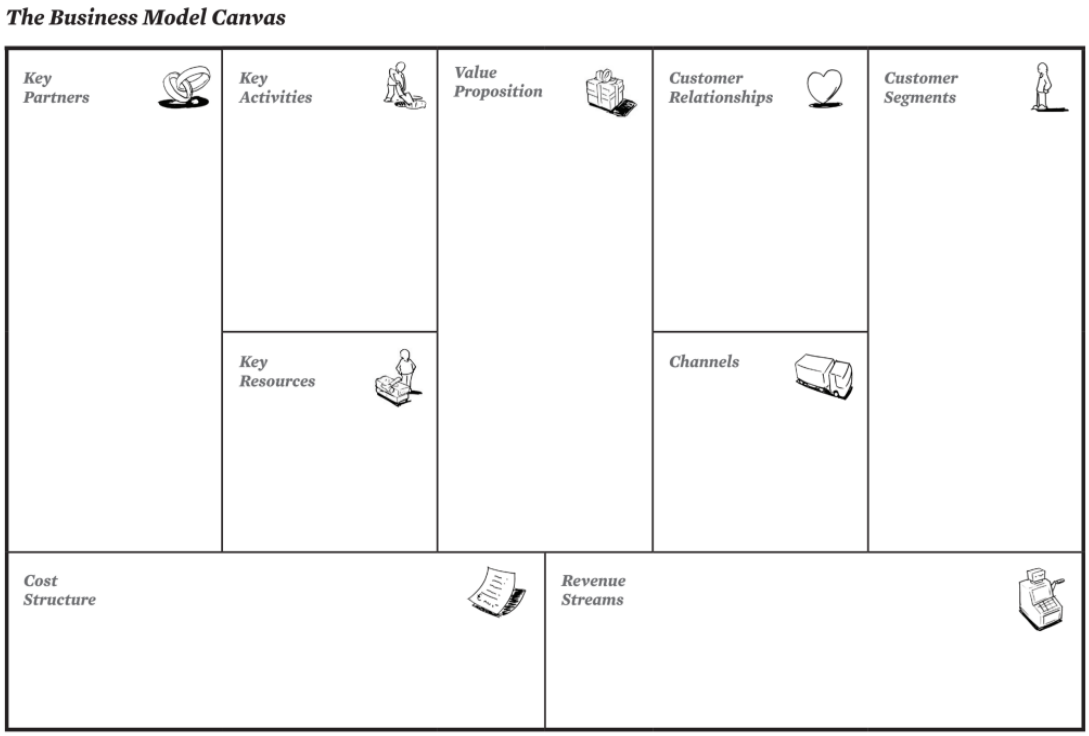


Figure 48. The Business Model Canvas

Please, fill the following business model canvas (BMC). You can find the explanation of each one of the BMC blocks in **Section 3. Methodology** from **D3.3. Citizen Hub Business model for the two pilots.** The next table shows the example of Valencia city pilot BMC.

11 - Societal Costs		**2 - Value Propositions**	**10 - Societal Revenue**
8 - Key Partners	**7 - Key Activities**	**4 - Customer Relations**	**1 - Customer Segments**
6 - Key Resources		**3 - Channels**	
9 - Cost structure		**5 - Revenue Streams**	

Example for Valencia pilot city

11 - Societal Costs
- Environmental unawareness
- Energy poverty
- High energy costs
- Low standard of living due to outdated housing
- Social exclusion
- Lack of specialized workforce
- Lack of quality in construction works
- Unemployment

2 - Value Propositions

For homeowners:
Frictionless access to an energy efficient, accessible, and comfortable home.
For contractors, professionals, and financing entities:
candid project pipeline

10 - Societal Revenue
- Increased comfort, wellbeing, and productivity of residents in Valencia
- Mitigation of energy poverty through lower energy costs
- Higher quality of life for dwellers
- Stronger economy and local job creation
- Energy savings and greenhouse gases reduction
- Raised sustainability awareness
- Social cohesion
- Healthcare system savings through less energy-poverty-related illness

8 - Key Partners
- Xaloc network
- VCE
- IVE and GVA
- VRCP
- GNE Finance
- UIPI and StH Consortium
- City Council, Plan Cabanyal, Right to Hous
- AVAESEN, ASELEC
- Professionals' associations and colegios
- Financial Institutions

7 - Key Activities
- OSS's personnel onboarding
- Technical and economic pre-diagnosis of the home and p
- Contractors' validation process
- Service delivery workflows
- Customer journey
- Develop jargon-free information material for HO
- Subsidies and licenses processing
- Data gathering and analysis
- Monitoring of on-going, planned and failed projects
- Development of partnerships (local associations and Fis)
- Workshops and events
- Mediation between users and contractors
- Post renovation follow-up

4 - Customer Relations
- Dedicated personal assistance
- Long term
- Automated services
- Communities
- Co-design of projects
- Citizens' School as a participatory group

1 - Customer Segments
- Primary focus: homeowners in multifamily
- Secondary focus: single-family homeowners
- *Administradores de Fincas (Property managers)

6 - Key Resources

Personnel
- Physical office
- Web portal
- Sociodemographic and building data
- Brand
- Contractor's list
- Protocols

Supporting tools for staff
- Customer service protocol
- Files management platform
- Energy efficiency guides
- Technical and financial calculation tools
- Services Manual, phone assistance & Training program (X

Customer tools
- Energy efficiency factsheets and leaflets
- Self-diagnosis tools
- Comparative tables with technical and financial solutions
- Aids and subsidies table

3 - Channels

Offline
- EO front-desk and appointed interviews
- Workshops and target events: monthly worksh
- Community of homeowners' meetings
- Leaflets, posters, and bus stops ads
- Information points including other municipal
- StH Ambassadors promoting the project
- Word-of-mouth
- Newspapers
- Collaboration with banks offices and real estate offices

Online
- EO social medial channels and monthly newsletter
- EO webinars and workshops: monthly workshops also onl
- External webinars and events attended
- Google Ads and paid promotion
- Xaloc website

9 - Cost structure
- Personnel
- Office utilities
- Marketing and communication actions
- ICT tools
- Travel/ outside events

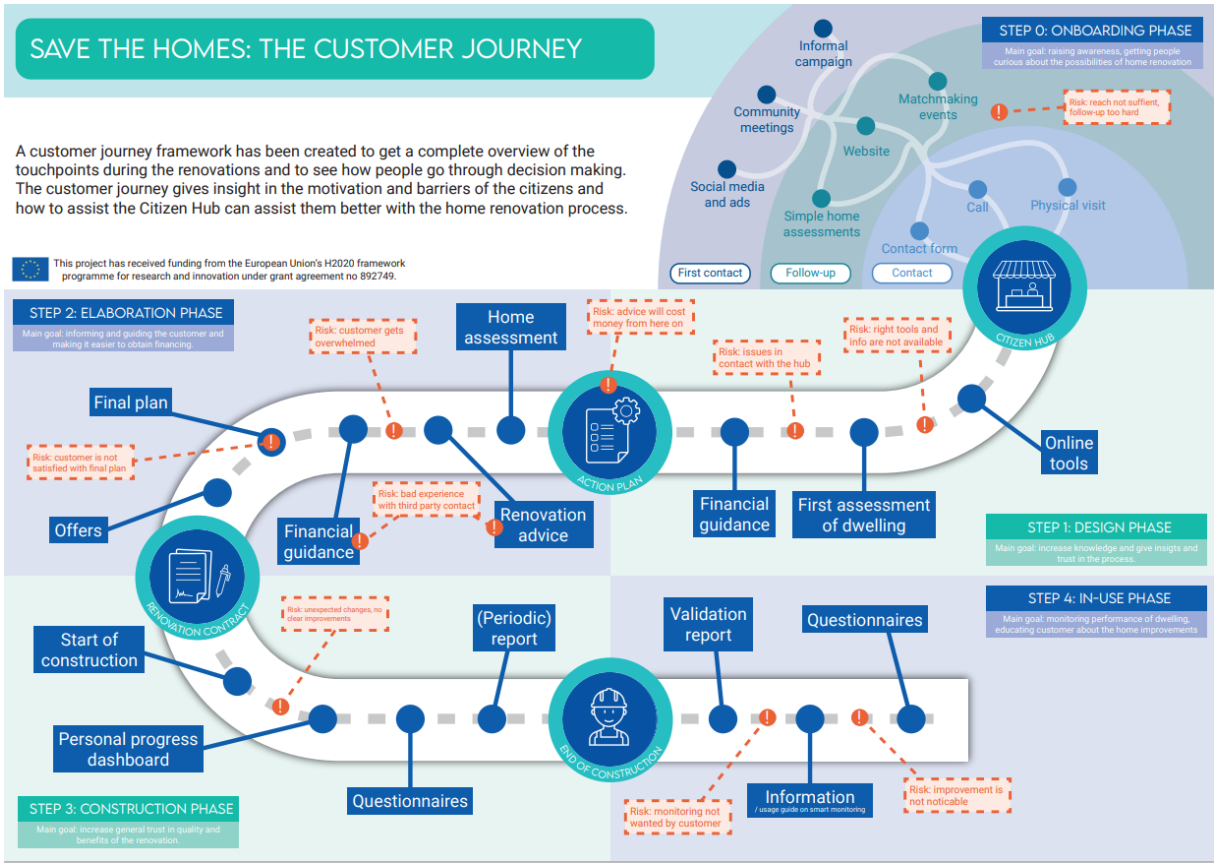
5 - Revenue Streams
- City council funding
- Regional Funding
- EU Projects funding (e.g., Save the Homes and WELLBASED)
- Regional subsidies under Program 2 of the Real Decreto 853/2021: 'Support program for renovation offices'

Risk assessment

The aim of this document is to review step-by-step the possible risks that could occur, and how to solve them or how to avoid them. Follower cities can choose to put steps together if local circumstances influence the outcome.

So, for each stop and sub-stop, it is needed to define:

- The main activity deployed, or service offered.
- The roles and actors implementing them.
- The delivered quality sought.
- The risks related.
- The potential solutions/ correction measures.



Please, fill the following tables with this information for each sub-step (from A to T).

STEP 0: ONBOARDING PHASE

Step	**0: Onboarding**
Sub-step	**A: First contact**
Main activity/service	
Roles and actors	
Delivered quality	
Risks related	
Chance/Solution	

Step	**0: Onboarding**
Sub-step	**B: Follow-up**
Main activity/service	
Roles and actors	
Delivered quality	
Risks related	
Chance/Solution	

Step	**0: Onboarding**
Sub-step	**C: Contact**
Main activity/service	
Roles and actors	
Delivered quality	
Risks related	
Chance/Solution	

STEP 1: DESIGN PHASE

Step	**1: Design**
Sub-step	**D: First assessment of the dwelling**
Main activity/service	
Roles and actors	
Delivered quality	
Risks related	
Chance/Solution	

Step	**1: Design**
Sub-step	**E: Financial Guidance**
Roles and actors	
Delivered quality	
Risks related	
Chance/Solution	

Step	**1: Desing**
Sub-step	**F: Action plan**
Main activity/service	
Roles and actors	
Delivered quality	
Risks related	
Chance/Solution	

STEP 2: ELABORATION PHASE

Step	**2: Elaboration**
Sub-step	**G: Home assessment**
Main activity/service	
Roles and actors	
Delivered quality	
Risks related	
Chance/Solution	

Step	**2: Elaboration**
Sub-step	**H: Renovation advice**
Main activity/service	
Roles and actors	
Delivered quality	
Risks related	
Chance/Solution	

Step	**2: Elaboration**
Sub-step	**I: Financial guidance**
Main activity/service	
Roles and actors	
Delivered quality	
Risks related	
Chance/Solution	

Step	**2: Elaboration**
Sub-step	**J: Final plan**
Main activity/service	
Roles and actors	
Delivered quality	
Risks related	
Chance/Solution	

Step	**2: Elaboration**
Sub-step	**K: Offers**
Main activity/service	
Roles and actors	
Delivered quality	
Risks related	
Chance/Solution	

STEP 3: CONSTRUCTION PHASE

Step	**3: Construction**
Sub-step	**L: Renovation contract**
Main activity/service	
Roles and actors	
Delivered quality	
Risks related	
Chance/Solution	

Step	**3: Construction**
Sub-step	**M: Start of construction**
Main activity/service	
Roles and actors	
Delivered quality	
Risks related	
Chance/Solution	

Step	**3: Construction**
Sub-step	**N: Personal progress dashboard**
Main activity/service	
Roles and actors	
Delivered quality	
Risks related	
Chance/Solution	

Step	**3: Construction**
Sub-step	**O: Questionnaires**
Main activity/service	
Roles and actors	
Delivered quality	
Risks related	
Chance/Solution	

Step	**3: Construction**
Sub-step	**P: Periodic report**
Main activity/service	
Roles and actors	
Delivered quality	
Risks related	
Chance/Solution	

Step	**3: Construction**
Sub-step	**Q: End of construction**
Main activity/service	
Roles and actors	
Delivered quality	
Risks related	
Chance/Solution	

STEP 4: IN-USE PHASE

Step	**4: In-use**
Sub-step	**R: Validation**
Main activity/service	
Roles and actors	
Delivered quality	
Risks related	
Chance/Solution	

Step	**4: In-use**
Sub-step	**S: Information/Usage guide on smart monitoring**
Main activity/service	
Roles and actors	
Delivered quality	
Risks related	
Chance/Solution	

Step	**4: In-use**
Sub-step	**T: Questionnaires**
Main activity/service	
Roles and actors	
Delivered quality	
Risks related	
Chance/Solution	

Example for Valencia and Rotterdam pilot cities

The following table shows an example for the first sub-step of the customer journey. In this case, a comparison is made between Valencia and Rotterdam pilot cities. The information for the rest of the sub-steps is available in the **D4.5. Action plan, risk assessment and quality assurance of the renovation activities.**

<table>
<tr><td colspan="2">COMPARISON
Step 0 - A: First contact: community meetings, social media and ads and informal campaigns</td></tr>
<tr><td>Rotterdam</td><td>Valencia</td></tr>
<tr><td>Building the expertise of the HUB, explorations of a working group in Alex Energie (AE) about making homes energy neutral. The first resident seeks support from the HUB and invites neighbors to participate in a feasibility study into making the block more sustainable.</td><td>Awareness campaigns, mostly related to subsidies through social media and ads.
Properties administrators (trained in energy refurbishment and the available subsidies) provide information to building owners.
Brochures are spread around the energy offices (directly in mailboxes, real estate offices and banks).</td></tr>
<tr><td><u>Roles defined:</u>
• Energy Cooperative (promotional activities HUB Alexander)
• Buurmensen (active volunteers of AE)
• App IkWoon (digital tool)
• Energy coaches (volunteers who have been trained to provide first support towards light energy saving measures)
•</td><td><u>Roles defined:</u>
• Municipality of Valencia (funding)
• Valencia Clima y Energia (managing)
• Energy Office (operation)
• Renovation agents & managers officially registered (collaboration)
• Regional government (coordination)
• IVE (technical support)</td></tr>
<tr><td colspan="2"><u>Quality:</u>
• Getting people together is the first step towards a collective
• Community meetings can inspire the people that attend with existing local examples
• Local actions instead of global actions
• Low threshold to become active.
<u>Risks:</u>
• Sending the right message for the group
• Reluctant citizens can ‘hijack' the event with their individual problems
• How to reach the people after the early adopters?
• How to become recognised and found by citizens?
• Lack of awareness with citizens: citizens are not interested enough to look further into their dwelling’s renovation process.
• Keep the group committed and stay joined in the following steps.</td></tr>
<tr><td colspan="2">Chance / solution:
• Provide a brief but clear explanation of the process that the citizen will walk through when taking on a renovation project. Be open and transparent in the process. Ask for feedbacks. When possible, make joined decisions/choices. The organiser of the meeting should be an expert on the topic (renovation) as well as on expectation management and guiding a group of persons. This cannot be dealt with just a member or employee, but someone with training and expertise in communication is needed.
• Property administrators, who are in direct contact with residential building owners, are trained in energy renovation and subsidies managing.
• Citizen Hub social media, property administrators and other agents related to the renovation process can use best practices with previous renovation process results and experiences to offer objective and close data. For example, using monitored data, thermographic images, or feedback from other homeowners. This gives trust to the people. The best practices map is developed to support this action.
• In order to maintain the citizens’ interest, do a follow-up of the people that did the first contact.</td></tr>
</table>

Table 26. Risk assessment for sub-step 0-A (Valencia city pilot)

Monitoring: KPIs definition

The following table shows the KPIs proposed to quantify the level of achievement of distinct goals. The table shows the operational KPI divided in 6 different sections, the monitoring rate, and the gathering method. Please, fill de column “Availability” to reflect if your OSS can provide these KPIs. An extra row is proposed in each section in case you need to add new KPIs. Add more rows if needed. The explanation of the KPIs methodology definition is available in **D4.2 - Citizen Hub model agreement including quality control system for the business model elements and monitoring protocols for evaluation of partners’ activities.**

	Operational KPI	Monitoring rate	Data gathering method	Availability
Citizen hub sustainability	Costs	Monthly	Budget	
	Revenue to OPEX ratio	Monthly	Budget	
	Number of public loans or subsidies mobilised	Monthly	Budget	
	Other:			
Pipeline, support and execution of project	Number of first approaches by calls from potential contacts	Monthly	CRM	
	Number of first approaches by walk-ins of potential contacts	Monthly	CRM	
	Number of first approaches by emails from potential contacts	Monthly	CRM	
	Number of web visits by single-users	Monthly	CRM	
	Total number of first approaches of potential contacts	Monthly	CRM	
	Number of new contacts by calls	Monthly	CRM	
	Monthly conversion rate by calls	Monthly	CRM	
	Number of new contacts by walk ins	Monthly	CRM	
	Monthly conversion rate by walks ins	Monthly	CRM	
	Number of new contacts by emails	Monthly	CRM	
	Monthly conversion rate by emails	Monthly	CRM	
	Number of new contacts by web visits	Monthly	CRM	
	Monthly conversion rate by web visits	Monthly	CRM	
	Total number of new contacts of single-family dwellings	Monthly	CRM	
	Total number of new contacts of multi-family buildings	Monthly	CRM	
	Total number of new contacts	Monthly	CRM	
	Monthly conversion rate by total contacts	Monthly	CRM	
	Number of dwellings included in the new single-family contacts	Monthly	CRM	
	Number of dwellings included in the new multi-family building contacts	Monthly	CRM	
	Number of multi-family buildings included in the new multi-family building contacts	Monthly	CRM	
	Total number of dwellings included in the total number of new contacts	Monthly	CRM	

	Number of workshops/sessions	Monthly	CRM	
	Monthly workshops/sessions conversion rate	Monthly	CRM	
	Number of dwellings included in the workshops/sessions (for single-family)	Monthly	CRM	
	Number of dwellings included in the workshops/sessions (for multi-family buildings)	Monthly	CRM	
	Number of multi-family buildings included in the workshops/sessions	Monthly	CRM	
	Total number of dwellings included in the workshops/sessions	Monthly	CRM	
	Number of technical advice meetings	Monthly	CRM	
	Monthly technical advice conversion rate	Monthly	CRM	
	Number of dwellings included in the technical advice meetings (for single-family)	Monthly	CRM	
	Number of dwellings included in the technical advice meetings (for multi-family buildings)	Monthly	CRM	
	Number of multi-family buildings included in the technical advice meetings	Monthly	CRM	
	Total number of dwellings included in the technical advice meetings	Monthly	CRM	
	Number of financial advice meetings	Monthly	CRM	
	Monthly financial advice conversion rate	Monthly	CRM	
	Number of dwellings included in the financial advice meetings (for single-family)	Monthly	CRM	
	Number of dwellings included in the financial advice meetings (for multi-family buildings)	Monthly	CRM	
	Number of multi-family buildings included in the financial advice meetings	Monthly	CRM	
	Total number of dwellings included in the financial advice meetings	Monthly	CRM	
	Number of dwellings included in rehabilitation works	Monthly	CRM	
	Monthly rehabilitation works conversion rate	Monthly	CRM	
	Number of dwellings included in the rehabilitation works (for single-family)	Monthly	CRM	
	Number of dwellings included in the rehabilitation works (for multi-family buildings)	Monthly	CRM	
	Number of multi-family buildings included in the rehabilitation works	Monthly	CRM	
	Average time/user by phase of the customer journey	Monthly	CRM	
	Type of interventions hired in the the construction phase	Monthly	Exit survey	
	Positive reviews score	Monthly	Exit survey	
	Other:			

Economic Impact	Investment triggered	Monthly	Proposal and Exit survey	
	Jobs created	Monthly	Proposal and Exit survey	
	Amount of public loans or subsidies mobilised	Monthly	Proposal and Exit survey	
	Other:			
Environmental Impact	Monthly gwh/y saved	Monthly	Proposal and Exit survey	
	Monthly tCO2eq/y saved	Monthly	Proposal and Exit survey	
	Other:			
Social Impact	Health and air quality benefits reviews	Monthly	Exit survey	
	Satisfaction survey at the end of each phase	Monthly	Exit survey	
	Other:			
Partnerships	Number of new partnerships	Monthly	CRM	
	Number of works done by recommended partner	Monthly	Survey + CRM	
	Value of works done by recommended partner	Monthly	Survey + CRM	
	Review score for each partner	Monthly	Survey + CRM	
	Contractor availability	Monthly	Survey + CRM	
	Other:			

Table 27.Business model KPIs for the Valencia city pilot

Example for Valencia pilot city

order	KPI section	KPI ID	KPI name	Answer by	Answer each...	Answer format
1	location	L01	municipality	office staff	new customer	select
2	location	L02	building address	office staff	customer	coordinates or address
3	sustainability	S01	OPEX	budget resp	12M	€
4	sustainability	S02	revenue	budget resp	12M	€
5	sustainability	S10	OPEX/revenue	AUTO	12M	%
6	sustainability	S20	subsidies	budget resp	12M	€
7	sustainability	S21	OPEX/subsidies	AUTO	12M	%
8	sustainability	S22	subsidies origin	budget resp	12M	select
9	pipeline	P01	first contact	office staff	new customer	select
10	pipeline	P02	time contact (min)	office staff	new customer	int
11	pipeline	P03	n dwellings =1	office staff	new customer	1/0
12	pipeline	P10	personal meeting	office staff	customer	1/0
13	pipeline	P11	time meeting (min)	office staff	customer	int
14	pipeline	P12	n dwellings >1	office staff	customer	int
15	pipeline	P19	conversion 01	AUTO	6M	%
16	pipeline	P20	project type	office staff	customer	select
17	pipeline	P21	professional from registry	office staff	customer	1/0
18	pipeline	P22	satisfaction professional	office staff	customer	select
19	pipeline	P23	subsidies applied	office staff	customer	1/0
20	pipeline	P23-IT	subsidies applied	IT	6M	int
21	pipeline	P24	time follow-up (min)	office staff	customer + 3M	int
22	pipeline	P29	conversion 12	AUTO	6M	%
23	pipeline	P30	reno works	office staff	customer + 6M	1/0
24	pipeline	P31	subsidies got	office staff	customer + 6M	1/0
25	pipeline	P31-IT	subsidies got	IT	6M	int
26	pipeline	P32	professional form registry	office staff	customer + 6M	1/0
27	pipeline	P33	satisfaction professional	office staff	customer + 6M	select
28	pipeline	P33	time check (min)	office staff	customer + 6M	int
29	pipeline	P39	conversion 23	AUTO	6M	%
30	pipeline	P40	satisfaction	office staff	customer + 9M	1/0
31	pipeline	P41	success story	office staff	customer + 9M	1/0
32	pipeline	P42	time success story (min)	office staff	customer + 9M	int
33	pipeline	P43	satisfaction result	office staff	customer + 9M	select
34	pipeline	P44	time satisfaction (min)	office staff	customer + 9M	int
35	pipeline	P49	conversion 34	AUTO	6M	%
36	pipeline	P50	conversion 4satisfied	AUTO	6M	%
37	impact	I01	project cost	office staff	customer + 3M	€
38	impact	I02	subsidies applied	office staff	customer + 3M	€
39	impact	I10	works cost	office staff	customer + 6M	€
40	impact	I11	subsidies got	office staff	customer + 6M	€
41	impact	I12	jobs created	AUTO	6M	int
42	impact	I20	nrPE savings	office staff	customer + 3M	kWh/m2y
43	impact	I21	CO2 reduction	office staff	customer + 3M	tCO2eq/m2y
44	impact	I30	nrPE savings	office staff	customer + 6M	kWh/m2y
45	impact	I31	CO2 reduction	office staff	customer + 6M	tCO2eq/m2y
46	impact	I40	testimonies	office staff	customer + 9M	text
47	impact	I41	IEQ monitoring	office staff	customer + 9M	file
48	impact	I42	HWB questionnaire	office staff	customer + 9M	file
49	impact	I50	satifaction process	office staff	customer + 9M	select
50	partnership	R01	contacts registry	IT	6M	int
51	partnership	R02	professional form registry	AUTO	6M	%
52	partnership	R03	works cost	AUTO	6M	€
53	partnership	R10	satisfaction	AUTO	6M	double
54	objectives	O01	dwellings	program resp	12M	int
55	objectives	O02	investments	program resp	12M	€
56	objectives	O03	subsidies	program resp	12M	€
57	objectives	O04	nrPE savings	program resp	12M	kWh/m2y
58	objectives	O05	CO2 reduction	program resp	12M	tCO2eq/m2y
59	objectives	O06	dissemination audience	program resp	12M	int
60	objectives	O07	dissemination type	program resp	12M	select

Table 28. KPIs used in the Valencia city pilot

StH Document 8_Monitoring data templates

This document will help your Municipality or Region to collect the monitoring data using a common evaluation template. This template will be connected with a data **dashboard** for monitoring and reporting KPIs and impacts. This document is published in **D3.8. Monitoring data Plan for the two pilots**, where more information about the monitoring data procedure can be found, and the corresponding excel spreadsheet is also available.

The document is divided in two parts:

A. **Customer Journey Evaluation template**: it concerns the realization and reporting of the Sav€ the Homes customers satisfaction within the whole customer journey. This section deals with both Monitored data (quantitative) and User perception data (qualitative)
B. **The monitoring of the renovation benefits:** The relevant data related to building's energy performance and IEQ (well-being of occupants) will be stored, analysed and translated into information relevant for homeowners and local governments and municipalities. Therefore, this section deals with both Monitored data (quantitative) and building descriptions data (qualitative).

A. Customer Journey Evaluation template

This approach concerns the realization and reporting of the Sav€ the Homes customers satisfaction within the whole customer journey

Intro Tab:

Please follow instructions below:

Got to **Inputs** Tab:

1	Select **Country**
2	Type your **renovation goal**
3	Type your **step factor goals**

Please do not edit **grey cells**

Go to **MeasuredActions** tab,

For each action you implement, use a new **row**:

1	Type the City where the **Citizen Hub** which implemented the action is located
2	Select the **stage** to which the action corresponds
	0 *onboarding actions*
	1 *evaluation/diagnosis actions (self-assessment, standard options…)*
	2 *elaboration actions (customization, contracting, financing…)*
	3 *quality assurance actions (mediations, site visits…)*
	4 *validation actions (monitoring, sharing, certifying…)*
	5 *satisfaction (questionnaire)*
3	Select the kind of **mechanism** the action corresponds to
	event *on CH premises, human driven, dinamic information, to many users (general admission)*
	publication *online, static information, to many users*
	tool *online, dinamic information, to many users*
	interview *on CH premises, human driven, dinamic information, to one user*
	meeting *on CH premises, human driven, dinamic information, to many users (by invitation)*
	visit *on site, human driven, dinamic information, to many users (by invitation)*
	follow-up *online, to one user*
4	Type a **name** to individualize and/or describe the action
5	Select the **owner** or reponsible for the action
6	Type the number of **participants/ users/ visits** to the action
7	Type the **average dedication** needed for the staff od user to perform the action (in minutes, per participant if it is the case)

Please do not edit **grey cells**

Please do not edit **Variables** or **Hoja1** tabs (0000)

Please do not edit **grey cells**

Inputs Tab

Country	stage	renovation goal	people who…	step factor goals	is..
select	0	0	is targeted		of those who then use a Citizen Hub service
	1	0	uses services		of those who finally get personal assessment
	2	0	gets personal assessment		of those who actually renovate
	3		**renovates**		
	4	0	monitors/ validates		of those who renovated
		0	understands results		of those who monitored/ validated
	5	0	is satisfied		of those who renovated

Measured Actions Tab:

Citizen Hu	stage	mechanism	name	owner	visits	average dedicatio

Variables Tab (protected):

Country	stage	mechanism	owner
ES	0	A. event	VCE
NL	1	B. publication	IVE
SI	2	C. tool	GVA
	3	D. interview	VRCP
	4	E. meeting	BHG
	5	F. visit	AE
		G. follow-up	HIA
			SCUG
			CLU

Hoja1 Tab (protected): automatically filled

Citizen Hub	Country	stage	mechanism	name	owner	visits	average ded	objetivo

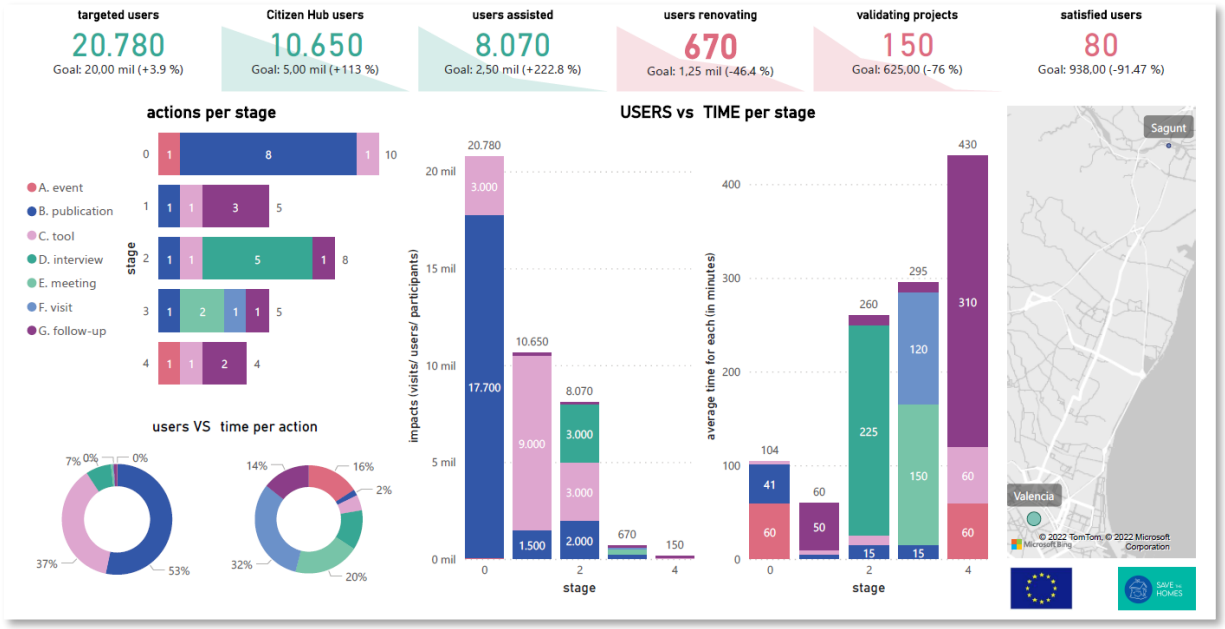
Example for Valencia pilot city

Country		stage		renovation goal	people who…	step factor goals	is..
select			0	20.000	is targeted	400%	of those who then use a Citizen Hub service
ES			1	5.000	uses services	200%	of those who finally get personal assessment
			2	2.500	gets personal assessment	200%	of those who actually renovate
			3	**1250**	**renovates**		
			4	625	monitors/ validates	50%	of those who renovated
				469	understands results	75%	of those who monitored/ validated
			5	938	is satisfied	75%	of those who renovated

Citizen Hub	stage	mechanism	name	owner	visits	average dedicatio	monitorin
Valencia, ES	0	A. event	energy renovation workshop II 04/2022	VCE	6	20	
Valencia, ES	1	A. event	Un nuevo pacto verde: los fondos europeos para la rehabilitación 11/2021	IVE	190	2	
Valencia, ES	0	A. event	energy renovation workshop 01/2022	VCE	8	15	
Valencia, ES	0	A. event	energy renovation workshop 02/2022	VCE	8	15	
Valencia, ES	0	A. event	energy renovation workshop 03/2022	VCE	8	15	
Valencia, ES	0	A. event	energy renovation workshop I 04/2022	VCE	8	15	
Valencia, ES	0	A. event	energy renovation workshop 05/2022	VCE	8	15	
Valencia, ES	0	A. event	energy renovation workshop 06/2022	VCE	8	15	
Valencia, ES	0	A. event	subsidies: process & tools dissemination event 02/2022	IVE	1763	1	
Valencia, ES	0	A. event	energy renovation with TripleA-reno board game 10/2021	VRCP	15	4	
Valencia, ES	0	A. event	energy renovation in multifamily buildings 02/2021	VRCP	65	2	
Valencia, ES	0	A. event	renovation agent/manager training or validation test at 06/2022	IVE	1821	1	
Valencia, ES	0	A. event	re-MODULEES re-LAB 11/2021	IVE	19	5	
Valencia, ES	0	A. event	re-MODULEES re-LAB 05/2022	IVE	21	5	
Valencia, ES	0	A. event	energy renovation workshop 11/2021	VCE	6	20	
València, ES	0	A. event	energy renovation workshop 12/2021	VCE	6	20	
Valencia, ES	0	B. publication	VCE website: energy efficiency visits 06/2022	VCE	916	3	
Valencia, ES	0	B. publication	newsletter 06/2022	VCE	800	5	
Valencia, ES	0	B. publication	newsletter 04/2021 (questionnaire)	IVE	7834	5	
Valencia, ES	0	B. publication	VCE website: energy efficiency visits 2021	VCE	270	3	
Valencia, ES	0	B. publication	newsletter 02/2022 (renovEU) 02/2022	IVE	10000	5	
Valencia, ES	1	C. tool	renovEU tool visits 06/2022	IVE	8700	6	
Valencia, ES	1	D. interview	spontaneous visits/ appointment 06/2022	VCE	30	30	
Valencia, ES	1	D. interview	phone calls attended 06/2022	IVE	10	10	
Valencia, ES	1	D. interview	forum conversations 06/2022	IVE	146	7	
Valencia, ES	1	D. interview	e-mails received and answered (renovEU) 06/2022	IVE	40	8	
Sagunt, ES	1	D. interview	spontaneous visits/ appointment 06/2022	IVE	50	30	
San Juan de Ali	1	D. interview	spontaneous visits/ appointment 06/2022	IVE	31	30	
Burjassot, ES	1	D. interview	spontaneous visits/ appointment 06/2022	IVE	42	30	
La Vall d'Uixó, E	1	D. interview	spontaneous visits/ appointment 06/2022	IVE	92	30	
Morella, ES	1	D. interview	spontaneous visits/ appointment 06/2022	IVE	605	45	
Valencia, ES	0	B. publication	monitoring campaign newsletter 01/2023	IVE	15588	1	YES
Valencia, ES	0	B. publication	citizens school newsletter 01/2023	VCE	20	1	YES
Valencia, ES	0	A. event	energy renovation workshop 01/2023	VCE	11	8	YES
Valencia, ES	0	B. publication	monitoring campaign SM 01/2023	VCE	244	1	YES
Valencia, ES	1	C. tool	Registration for monitoring Scenario B (pre-renovation) 02/2023	IVE	203	15	YES
Valencia, ES	3	C. tool	Registration for monitoring Scenario A (post-renovation) 02/2023	IVE	49	15	YES
Valencia, ES	2	F. visit	Monitored dwellings Scenario B (pre-renovation) 02/2023	IVE	12	1050	YES
Valencia, ES	4	F. visit	Monitored dwellings Scenario A (post-renovation) 02/2023	IVE	11	1050	YES
Valencia, ES	5	G. follow-up	Willing to share renovation experience (best practices map) 03/2023	IVE	6	30	YES
Valencia, ES	3	G. follow-up	Willing to renovate 03/2023	IVE	7	30	YES

Citizen Hub	Country	stage	mechanism	name	owner	visits	average ded	objetivo	monitoring
Valencia, ES	ES	0	A. event	energy renovation workshop II 04/2022	VCE	6	20	20.000	
Valencia, ES	ES	1	A. event	Un nuevo pacto verde: los fondos europeos para la rehabilitación 11/2021	IVE	190	2	5.000	
Valencia, ES	ES	0	A. event	energy renovation workshop 01/2022	VCE	8	15	20.000	
Valencia, ES	ES	0	A. event	energy renovation workshop 02/2022	VCE	8	15	20.000	
Valencia, ES	ES	0	A. event	energy renovation workshop 03/2022	VCE	8	15	20.000	
Valencia, ES	ES	0	A. event	energy renovation workshop I 04/2022	VCE	8	15	20.000	
Valencia, ES	ES	0	A. event	energy renovation workshop 05/2022	VCE	8	15	20.000	
Valencia, ES	ES	0	A. event	energy renovation workshop 06/2022	VCE	8	15	20.000	
Valencia, ES	ES	0	A. event	subsidies: process & tools dissemination event 02/2022	IVE	1763	1	20.000	
Valencia, ES	ES	0	A. event	energy renovation with TripleA-reno board game 10/2021	VRCP	15	4	20.000	
Valencia, ES	ES	0	A. event	energy renovation in multifamily buildings 02/2021	VRCP	65	2	20.000	
Valencia, ES	ES	0	A. event	renovation agent/manager training or validation test at 06/2022	IVE	1821	1	20.000	
Valencia, ES	ES	0	A. event	re-MODULEES re-LAB 11/2021	IVE	19	5	20.000	
Valencia, ES	ES	0	A. event	re-MODULEES re-LAB 05/2022	IVE	21	5	20.000	
València, ES	ES	0	A. event	energy renovation workshop 11/2021	VCE	6	20	20.000	
València, ES	ES	0	A. event	energy renovation workshop 12/2021	VCE	6	20	20.000	
Valencia, ES	ES	0	B. publication	VCE website: energy efficiency visits 06/2022	VCE	916	3	20.000	
Valencia, ES	ES	0	B. publication	newsletter 06/2022	VCE	800	5	20.000	
Valencia, ES	ES	0	B. publication	newsletter 04/2021 (questionnaire)	IVE	7834	5	20.000	
Valencia, ES	ES	0	B. publication	VCE website: energy efficiency visits 2021	VCE	270	3	20.000	
Valencia, ES	ES	0	B. publication	newsletter 02/2022 (renovEU) 02/2022	IVE	10000	5	20.000	
Valencia, ES	ES	1	C. tool	renovEU tool visits 06/2022	IVE	8700	6	5.000	
Valencia, ES	ES	1	D. interview	spontaneous visits/ appointment 06/2022	VCE	30	30	5.000	
Valencia, ES	ES	1	D. interview	phone calls attended 06/2022	IVE	10	10	5.000	
Valencia, ES	ES	1	D. interview	forum conversations 06/2022	IVE	146	7	5.000	
Valencia, ES	ES	1	D. interview	e-mails received and answered (renovEU) 06/2022	IVE	40	8	5.000	
Sagunt, ES	ES	1	D. interview	spontaneous visits/ appointment 06/2022	IVE	50	30	5.000	
San Juan de Alicante, ES	ES	1	D. interview	spontaneous visits/ appointment 06/2022	IVE	31	30	5.000	
Burjassot, ES	ES	1	D. interview	spontaneous visits/ appointment 06/2022	IVE	42	30	5.000	
La Vall d'Uixó, ES	ES	1	D. interview	spontaneous visits/ appointment 06/2022	IVE	92	30	5.000	
Morella, ES	ES	1	D. interview	spontaneous visits/ appointment 06/2022	IVE	605	45	5.000	
Valencia, ES	ES	0	B. publication	monitoring campaign newsletter 01/2023	IVE	15588	1	20.000	YES
Valencia, ES	ES	0	B. publication	citizens school newsletter 01/2023	VCE	20	1	20.000	YES
Valencia, ES	ES	0	A. event	energy renovation workshop 01/2023	VCE	11	8	20.000	YES
Valencia, ES	ES	0	B. publication	monitoring campaign SM 01/2023	VCE	244	1	20.000	YES
Valencia, ES	ES	1	C. tool	Registration for monitoring Scenario B (pre-renovation) 02/2023	IVE	203	15	5.000	YES
Valencia, ES	ES	3	C. tool	Registration for monitoring Scenario A (post-renovation) 02/2023	IVE	49	15	1.250	YES
Valencia, ES	ES	2	F. visit	Monitored dwellings Scenario B (pre-renovation) 02/2023	IVE	12	1050	2.500	YES
Valencia, ES	ES	4	F. visit	Monitored dwellings Scenario A (post-renovation) 02/2023	IVE	11	1050	625	YES
Valencia, ES	ES	5	G. follow-up	Willing to share renovation experience (best practices map) 03/2023	IVE	6	30	938	YES
Valencia, ES	ES	3	G. follow-up	Willing to renovate 03/2023	IVE	7	30	1.250	YES

Dashboard for Valencia city pilot:



B. Benefits Monitoring templates.

B. 1. Building description:

Initial Data

*Data from cadastral and provided by the occupant during the registration in the monitoring campaign

1. General data	# Number of monitoring case	
	Type of monitoring	
	Typology	
2. Personal data	Name	
	Address	
	City	
	Climate zone	
	Email	
	Telephone number	
3. Dwelling data	Constructed surface (Cadastral)	
	Year of construction	
	Current regulation	
	Cadastral reference	
	Listed building	
	Typer of building	
	Number of floors (building)	
	Dwelling location in building	
4. Facilities data	DHW	
	Heating	
	Cooling	
	Other	
5. Other data	Layouts	
	Energy performance certificate	
	Registered data	
	Gas bills	
6. Renovation measures after 2020?	Windows	
	Insulation (façade or roof)	
	DHW	
	Heating/Cooling	
	PV	
	Other	
	Date of measures	
7. Upcoming renovation measures?	Windows	
	Insulation (façade or roof)	
	DHW	
	Heating/Cooling	
	PV	
	Other	
	Expected date of measures	

Dwelling data

1. General info	Orientation	
	Number of floors	
	Number of rooms	
	Number of baths	
2. Occupant profile	Tenant/Owner	
	Home occupancy range	
	Number of occupants < 18	
	Number of occupants 18-65	
	Number of occupants > 65	
3. Facilities	**Lighting**	
	Type	
	Control system and sensors	
	DHW	
	Type	
	Year	
	Heating system	
	Type	
	Year	
	Control system and sensors	
	Setpoint temperature	
	Months of use	
	Cooling system	
	Type	
	Year	
	Control system and sensors	
	Setpoint temperature	
	Months of use	
	Ventilation	
	Type	
	Control system and sensors	
	Year	
	Photovoltaic panels	
	kWp	
	Year	
	Appliances	
	Fridge	
	Washing machine	
	Dryer	
	Dishwasher	
	Oven	
	Type of cooker	
	Control system and sensors	
4. Envelope	**Windows**	
	Type of glass	

	Type of frame	
	Type of opening	
	Air tightness	
	Blinds	
	Curtains	
	Solar protection	
	Façade	
	Width	
	Type	
	Roof	
	Sloping/flat	
	Type	
	Floor	
	Type	

Subjective wellbeing data

1. Indoor parameters	**How often do you experience discomfort due to…?**	**Never**	**Hardly ever**	**Sometimes**	**Frequently**	**Quite often**		
	Dry air							
	Humid air							
	Stuffy "bad" air							
	Unpleasant odour							
	Dust and dirty							
	Noise							
	Draught							
	Indoor temperature too high							
	Indoor temperature too low							
	Light that is dim							
	Light that causes glare and/or reflections							
2. Symptoms	**How often do you experience the following complaints…?**	**Never**	**Hardly ever**	**Sometimes**	**Frequently**	**Quite often**		
	Fatigue							
	Feeling heavy-headed							
	Headache							
	Dizziness							
	Difficulties concentrating							
	Itching, burning or irritation of the eyes							
	Visual disturbances							
	Irritated, stuffy or runny nose							
	Hoarse, dry throat							
	Respiratory problems							
	Sneezing, stuffy nose							
	Other….							

3. Cold / hot wall	**Do you feel the floor or wall cold/hot?**	**Never**	**Hardly ever**	**Sometimes**	**Frequently**	**Quite often**		
	cold wall/window in winter							
	hot wall/window in summer							
4. Thermal feeling	**Indoor thermal feeling**	**Hot**	**Warm**	**Slightly warm**	**Neutral**	**Slightly cool**	**Cool**	**Cold**
	In winter, in your house it usually does…							
	In summer, in your house you usually do…							
5. Clothing	**Clothing**	**Nothing**	**Light clothing**	**2 layers**	**Coat or more than 2 layers**			
	In winter, you usually wear...							
	In summer, you usually wear...							

Dwellings with energy measures

1. Measures after 2020	**Implemented measures**	
	Windows	
	Insulation (façade and/or roof)	
	DHW	
	Heating/Cooling	
	PV	
	Other	
	Date of the renovation measures	
	Reasons for the renovation	
	Too cold in winter	
	Too hot in summer	
	Too noisy	
	High humidity and/or mold	
	High energy consumption/cost	
	Other problems	
	It didn't have problems	
	Pictures previous state	
2. Feedback	Global appreciation of the works	
	Global appreciation of the measures	
	What has been the most difficult part of the process?	
	Have pre-existing problems improved?	
	Have you reduced your energy bills?	
3. Cost	Cost of the measures	
	Have you applied for Next Generation grants?	
	Has it been easy for you to process the grants?	
4. Tools	Have you used the renovEU tool?	
	Has the renovEU tool been useful to you?	
	Have you gone to the Energy Office/Xaloc?	
	Has the OE/Xaloc been useful to you?	
	Are you going to implement more measures?	

5. Upcoming measures	Windows	
	Insulation (façade and/or roof)	
	DHW	
	Heating/Cooling	
	PV	
	Other	
	Reasons for further improvements	
	Are you going to apply for Next Generation grants?	

Dwellings without energy measures

1. Upcoming measures	**Are you going to implement renovation measures?**	
	Windows	
	Insulation (façade and/or roof)	
	DHW	
	Heating/Cooling	
	PV	
	Other	
	Planned date	
2. Reasons for renovation	**Razones para llevar a cabo mejoras**	
	Too cold in winter	
	Too hot in summer	
	Too noisy	
	High humidity and/or mold	
	High energy consumption/cost	
	Other problems	
	It didn't have problems	
3. Budget	**Estimated budget**	
4. Grants	**Are you going to apply for Next Generation grants?**	
	Are you going to use renovEU tool?	
	Are you going to visit the energy office/Xaloc?	
5. Problems	**Biggest obstacles in the process so far**	

B. 2. Monitoring data description

Hoja1 Tab (themes and variables):

reg	country	building	unit	season	phase	family	variable	timestamp	value
from alldes	*from alldes*	*from alldes*	*from alldes*	Winter	Ante	Energy	Home energy consumption		
				Summer	Post	IndoorEQ	CO2		
						Wellbeing	Air Temperature		
							Relative humididty		
							Illuminance level		
							TVOC		
							Formaldehydes		
							PM2.5		
							PM10		
							Activity		
							Clothing		
							Stressors-		
							Symptoms-		
							Thermal comfort		

Measurements Tab (description):

unit	measurement	season	phase	family	variable
from Dwelling	*int*	*select*	*select*	*select*	*select*

Values Tab (data collection):

measurement	timestamp	value
int	*timestamp*	*double/ string*

Variables Tab:

season	phase	family	variable
Winter	Ante	**Energy**	**Home energy consumption**
Summer	Post	**IndoorEQ**	**CO2**
		Wellbeing	**Air Temperature**
			Relative humididty
			Illuminance level
			TVOC
			Formaldehydes
			PM2.5
			PM10
			Activity
			Clothing
			Stressors-
			Symptoms-
			Thermal comfort

Example for Valencia pilot. Example for one of the monitored dwellings. Data gathered during the interview and report with the analysis of the monitored data and personalized recommendations.

Initial Data

1.	**Datos**	
	#	40
	Tipo	A.1.
	Tipología	Vivienda dentro de edificio
	Nombre	xxxxxxxx
	Dirección	General San Martin 24. 3º - 4ª. 46004
	Población	Valencia
	Zona climática	B3
	Email	xxxxxxxx
	Teléfono	xxxxxxxx
	Profesión	Arquitecto
2.	**Vivienda**	
	Superficie construida catastro	140
	Año construcción	1980
	Normativa vigente	NBE CT79
	Referencia catastral	5918103YJ2751H0013JX
	Edificio protegido	No
	Forma edificio	Edificio entre medianeras
	Número de plantas (edificio)	IX
	Ubicación vivienda	Plantas intermedias
3.	**Instalaciones**	
	ACS	Termo eléctrico
	Calefacción	Aire acondicionado frío calor
	Refrigeración	Aire acondicionado frío calor
4.	**Otros**	
	Planos	Si
	Certificado	No
	Datos registrados	No
	Facturas gas natural	No tiene gas natural
5.	**¿Ha hecho mejoras >2020?**	Si
	Ventanas	No
	Aislam. Fachada o cubierta	No
	ACS	Si
	Calefacción/Refrigeración	Si
	PV	No
	Otros	No
	Fecha mejoras hechas	2020
6.	**¿Va a hacer más mejoras?**	Sí
	Ventanas	Si
	Aislam. Fachada o cubierta	No
	ACS	No
	Calefacción/Refrigeración	No
	PV	No
	Otros	No
	Fecha prevista	-

Dwelling data

1.	**General**	
	Orientación	esquina
	Número de plantas	1
	Número de habitaciones	3
	Número de baños	2
2.	**Uso**	
	Tipo de inquilino	alquilados desde hace 4 años
	Franja ocupación vivienda	trabaja aquí. 24h
	Número de ocupantes < 18a	1 cada 15 dias (está separado, su hijo)
	Número de ocupantes 18a-65a	1
	Número de ocupantes >65a	0
3.	**Iluminación**	
	Tipo	led
	Sistemas de control y sensores	-
	ACS	
	Tipo	Termo eléctrico en armario dormitorio
	Año	2020-2021, cambio por reparación
	Calefacción	
	Tipo	bomba calor conductos
	Año	2020-2021, cambio por reparación
	Sistemas de control y sensores	Mithsubishi
	Temperatura consigna	21-22
	Meses de uso	Uso como apoyo. Cuando está solo usa un radiador.
	Refrigeración	
	Tipo	bomba calor conductos
	Año	2020-2021, cambio por reparación
	Sistemas de control y sensores	Mithsubishi
	Temperatura consigna	
	Meses de uso	
	Ventilación	
	Tipo	Extractores baño
	Sistemas de control y sensores	No
	Año	antiguos
	Panales fotovoltaicos	
	kWp	-
	Año	-
	Electrodomésticos	
	Frigorífico - letra	nuevo A+
	Lavadora - letra	nuevo A+
	Secadora - letra	-
	Lavavijllas - letra	-
	Horno - letra	antiguos
	Tipo de cocina	antiguos
	Equipos en Stand by?	-
	Apagado automático stand by, temporizadores o regletas	-
4.	**Ventanas**	
	Tipo de vidrio	doble
	Tipo de marco	metalica, color granate
	Tipo apertura	correderas
	Estanqueidad al aire	mal ajuste
	Existe persiana	si, añadida hace 4 años en la zona de día. En la zona de noche ya había
	Existe cortinas	si
	Existe protección solar. Tipo	No es posible colocar toldos
	Fachada	
	Espesor	-
	Tipo cerramiento	Doble hoja con cámara posiblemente con aislamiento
	Cubierta	
	Inclinada o plana	-
	Tipo cerramiento	-
	Suelo	
	Tipo	-
	Tipo cerramiento	-

Subjective wellbeing data

1.	**¿Con qué frecuencia experimentas molestias debido a…?**	**Nunca**	**Rara vez**	**A veces**	**Frecuentemente**	**Muy a menudo**		
	Aire seco	x						
	Aire húmedo	x						
	Ambiente cargado	x						
	Olor desagradable	x						
	Presencia de polvo	x						
	Ruido					x		
	Corrtiente de aire							
	Temperatura ambiente demasiado alta					x		
	Temperatura ambiente demasiado baja			x				
	Iluminación natural deficiente							
	Deslumbramiento y/o reflejos							
2.	**¿Con qué frecuencia experimentas ls siguientes molestias…?**	**Nunca**	**Rara vez**	**A veces**	**Frecuentemente**	**Muy a menudo**		
	Fatiga							
	Pesadez en la cabeza							
	Dolor de cabeza							
	Mareo y/o sensación de confusión.							
	Dificultades para concentrarse							
	Picazón, ardor o irritación de los ojos.							
	Alteraciones visuales: visión borrosa, dificultad para enfocar objetos							
	Nariz irritada, congestionada o que moquea							
	Garganta ronca y seca							
	Problemas respiratorios (tos, falta de aliento, dificultad para respirar, ronquera, afonía)							
	Estornudos, nariz tapada							
	Otros …....	Evita usar AA porque siente molestias. No le gusta.						
3.	**¿Sientes el suelo o pared frío/caliente?**	**Nunca**	**Rara vez**	**A veces**	**Frecuentemente**	**Muy a menudo**		
	Pared/ventana fría en invierno			x				
	Pared/ventana caliente en verano				x			
4.	**Sensación térmica interior**	**Mucho calor**	**Calor**	**Más bien calor**	**Neutral**	**Fresco**	**Frío**	**Mucho frío**
	En invierno, en tu casa suele hacer…					x		
	En verano, en tu casa suele hacer…	x						
5.	**Vestimenta**	**Nada/Ropa interior**	**Ropa ligera**	**2 capas**	**Abrigo o mas de 2 capas**			
	En invierno, suele vestir…			x				
	En verano, suele vestir…							

Dwellings with energy measures

1.	**Mejoras realizadas**	
	Ventanas	
	Aislam. Fachada o cubierta	
	ACS	x
	Calefacción/Refrigeración	x
	PV	
	Otros	persiasnas hace 4 años
	Año mejoras	2020-21
	Razones para llevar a cabo mejoras	
	Mucho frío en invierno	
	Mucho calor en verano	
	Mucho ruido	
	Mucha humedad y/o moho	
	Consumo/Coste energético elevado	
	Otros problemas	se estropearon
	No tenía problemas	
2.	**Apreciación global de los trabajos**	
	Apreciación global de los medidas	Positiva
	Qué ha sido lo más complicado del proceso	
	Han mejorado los problemas preexistentes?	Sí
	Has reducido tus facturas energéticas?	
3.	**Coste mejoras**	-
	Has solicitado ayudas Next Generation	No
	Te ha resultado sencillo tramitar las ayudas	
4.	Has utilizado la aplicación renoveu	No
	Te ha resultado útil la aplicación renoveu	
	Has acudido a la Oficina de la Energía/Xaloc	No
	Te ha resultado útil la OE/Xaloc	
5.	**Fotografías estado previo**	-
6.	**¿Vas a hacer más mejoras?**	
	Ventanas	Todas las ventanas
	Aislam. Fachada o cubierta	
	ACS	
	Calefacción/Refrigeración	
	PV	
	Otros	
	Razones para llevar a cabo más mejoras	Ruido y malestar térmico especialmente en verano
	¿Vas a pedir ayudas NextGeneration?	Sí
	Otros	Sin ayudas quizá no cambiaría las ventanas Haría uso de las Oficinas para dudas puntuales No haría más intervenciones aunque tuviera más ayudas. Porque implicaría aislamiento por el exterior e involucrar a la comunidad.

With this data a report can be prepared with the analysis of the monitored data and personalized recommendations to save energy and improve the indoor comfort level:

Analysis of the monitored data:

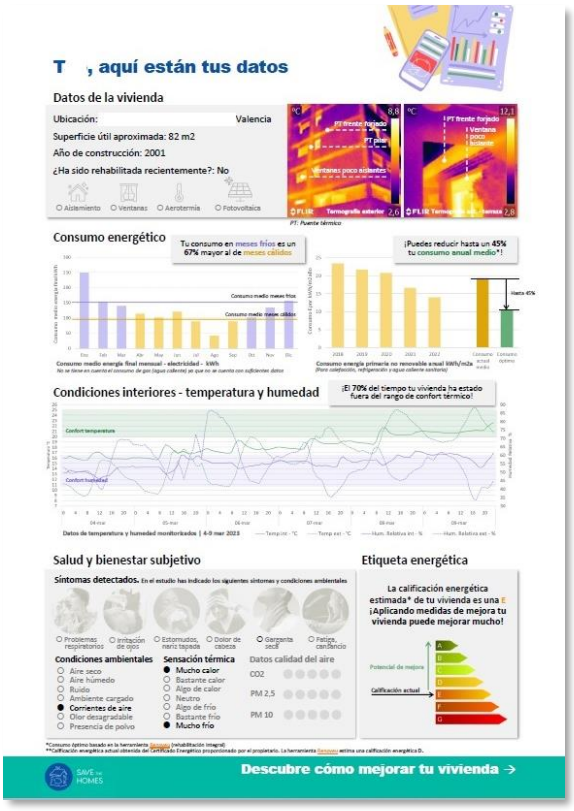


Figure 49. Example of report with the analysis of the monitored data

Habits and measures with no economic cost for energy saving (left) and improve comfort (right):

Figure 50. Example of report with the recommendations with no economic cost

Low-cost energy measures for energy saving (left) and improve comfort (right):

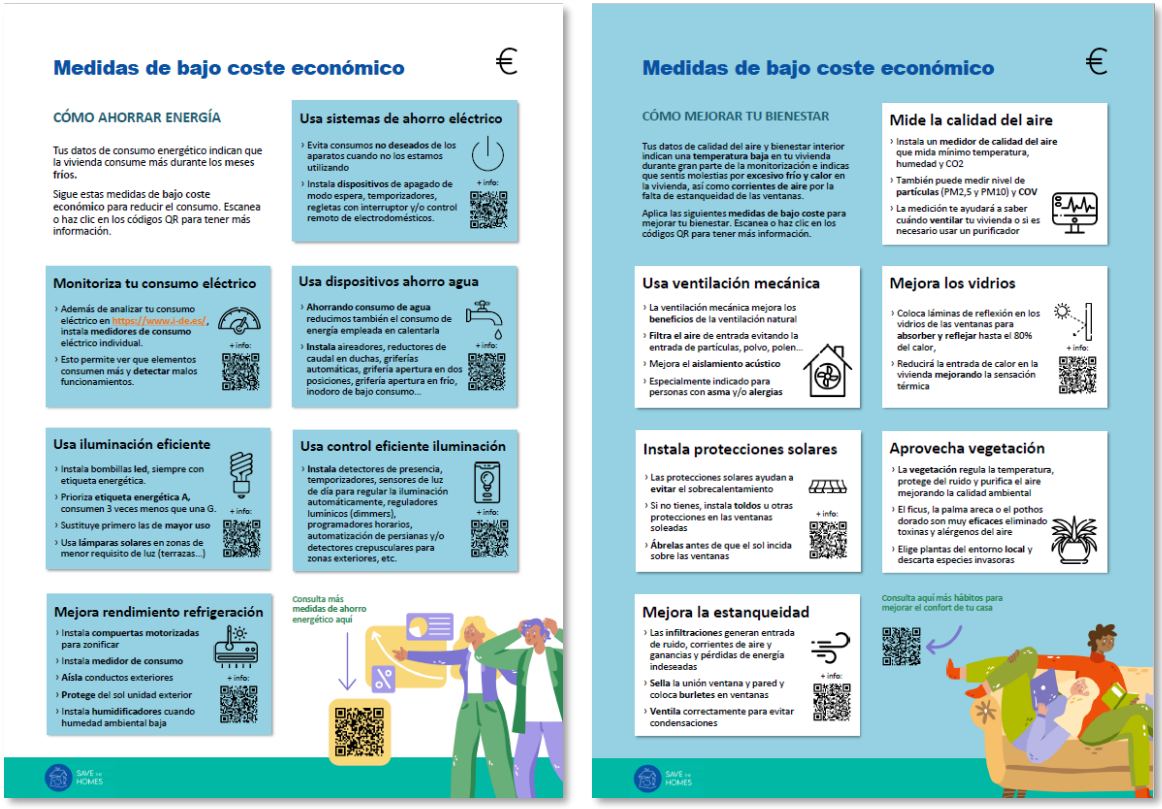


Figure 51. Example of report with the low-cost recommendations

Options of packs for energy renovation with economic investment:

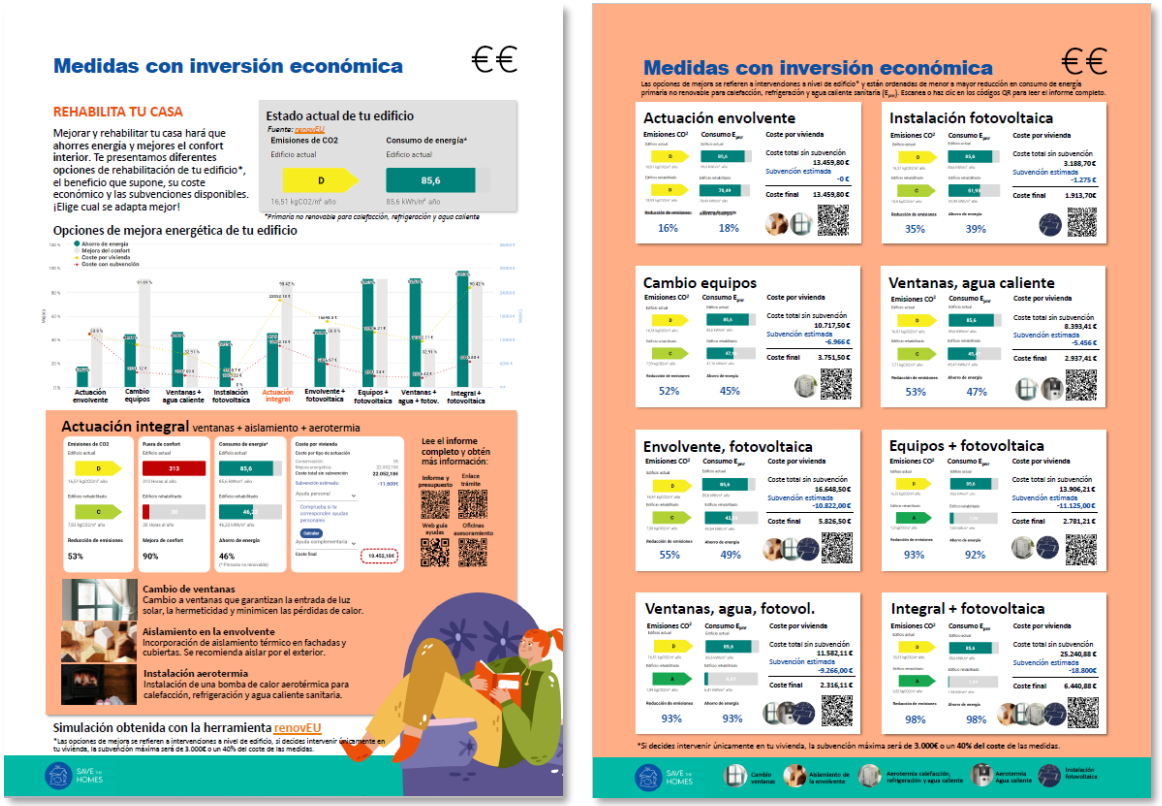


Figure 52. Example of report with energy renovation options

Monitoring: Value (satisfaction)

The objective of this document is the realization and reporting (satisfaction evaluation) of the Sav€ the Homes customers satisfaction after work is done (Stop 4 - In-Use phase). The following table shows the KPIs proposed to quantify the customer's satisfaction after using the customer journey. This KPIS are now included in the Pipeline KPIs and are explained in **D4.2 - Citizen Hub model agreement including quality control system for the business model elements and monitoring protocols for evaluation of partners' activities.** Once the satisfaction evaluation questionnaire is fully completed, it will be available in **D4.8. Evaluation of the Citizen Hub holistic renovation services and the customer journeys.**

Please, fill the column "Follower" if your OSS can gather this satisfaction feedback from the customers:

KPI ID	KPI name	Answer by	Answer each...	Answer format	Follower
P22	satisfaction professional	office staff	customer	select	
P33	satisfaction professional	office staff	customer + 6M	select	
P40	satisfaction	office staff	customer + 9M	1/0	
P43	satisfaction result	office staff	customer + 9M	select	
I50	satisfaction process	office staff	customer + 9M	select	
R10	satisfaction	AUTO	6M	double	

- P22 addresses the satisfaction level with the contracted professional.
- P33 addresses the satisfaction level with the contacted contractor.
- P40 addresses the finishing of renovation works through the offer to answer an exit survey and marks the start of stage.
- P43 addresses the satisfaction level with the result of renovation works.
- I50 addresses the satisfaction level with the Citizen Hub service.
- R10 addresses the level of satisfaction with the professionals and contractors contacted from the registry and is related to P22 and P33

Annex 3 – The Citizen Hub blueprint & implementation script

1. Market segmentation – supply and demand sides								
Sub-step	Test materials (Deliverable)	Question	How difficult is for you answering this question? (1-5)	How useful are the test materials for you? (1-5)	Valencia	Rotterdam	How much do you relate to these experiences? (1-5)	Your answers
A. Overall Strategy	StH Document 1. Mapping methodologies (D2.1)	Which are your targeted buildings? Which building typology should be renovated first to get greatest effectiveness in the impacts through the renovation process? Which are your targeted subjects? Which user's profiles should be targeted to get the greatest effectiveness in the onboarding and engagement with the renovation process? Which are your targeted suppliers? Which segment of suppliers should be targeted to get the greatest effectiveness in the implementation quality and user satisfaction?			50 years old multifamily buildings with a legal obligation and maintenance to do, where families with children live, organized under the coordination of a professional property administrator, and big enough to be attractive to capable renovation companies.	The most favourable neighbourhood meets the following criteria: >1 terraced house, >80% owner-occupied, building period before 1990, >50% of residents are between 15 and 65 years old, >50% of households are larger than 1 person		

B. The top-down approach	StH Document 1. Mapping methodologies (D2.1)	Which are your official/ statistical data sources? How can you combine and filter them in order to qualify, quantify and measure your targets?			Cadastre, National Statistics Institute, Regional government databases and IVE studies on Residential buildings. Translation of available real data into characterized archetypes/ personas in the geographic scope, to which apply ratios, behaviours and other results from scientific/ official studies			
C. The bottom-up approach	StH Document 1. Mapping methodologies (D2.1)	Which are your participatory processes? What kind of information you got from them? How can you use these data to derive/ extrapolate market behaviour, needs or expectations?			Feedback from energy office users through surveys and periodic reports, property administrators' feedback from workshops and citizens and professionals' feedback through questionnaire disseminated by IVE. Selection of a series of attributes which were affecting the renovation market.	Information was obtained from an already convinced community to find out which parts of the process could be extrapolated.		
D. The opportunity	StH Document 1. Mapping methodologies (D2.1)	What would move citizens into renovation? Why would move suppliers into the energy renovation?			The big number of available (and not spent) subsidies	The repetition of building components in Dutch building stock to facilitate the implementation and organising collectives around this repetition.		

2. Demand side focus								
Sub-step	**Test materials (Deliverable)**	**Question**	**How difficult is for you answering this question? (1-5)**	**How useful are the test materials for you? (1-5)**	**Valencia**	**Rotterdam**	**How much do you relate to these experiences? (1-5)**	**Your answers**
E. Communication strategy	StH Document 2. Citizen engagement (D2.2.)	How to drive demand side motivation into the market opportunity?	-	-	-	-	-	-
F. The motivation	StH Document 2. Citizen engagement (D2.2.)	Which are the motivations of homeowners? Which is the correct message to guide demand interests into OSS context opportunity? Which channels should be used to reach our targeted audience?			**Motivation:** It was joined the families in old multifamily buildings motivation (only necessary -cheap-maintenance) with the regional government opportunity: subsidies and legal obligations) **Message:** Including energy renovation, maintenance renovation is cheaper (subsidies) **Channel:** massive communication campaign with examples and simulation tool	The first pilot, initiated by an active homeowner, can be exploited as a first success. Channel: Alex Energie entity and Ikwoon as a digital way to show the benefits.		
G. The Marketing materials	StH Document 2. Citizen engagement (D2.2.)	Which are the correct marketing materials and activities to resonate with the different targets motivations and clearly deliver the message?			Awareness campaigns with videos with benefits of energy renovation, solutions factsheets, funding options brochures, mass media materials and appointment letters for users “forced” to an	The targeted area is small, so first they focused on the renovations that were taking place, collecting stories and the needs/experiences.		

					intervention, professional's training programmes, on-line self-operated tools.			
H. The Community	StH Document 2. Citizen engagement (D2.2.)	Which are your local well-known existing places and channels for distributing and exploiting the marketing materials? Which are your local stakeholders and potential allies to fine-tune campaigns and implement specific actions?			A community started around the physical premises of the OSS (such as Citizens school), the presence of the OSS in social media and the virtual channels for problem solving and participation. Local organizations in touch with targeted population were involved (Demand side Advisory Boards), and a set of activities planned.	Alex energy is an actual community. Members receive advice and can benefit of advantages such as collective purchases.		

3. Supply side focus								
Sub-step	**Test materials (Deliverable)**	**Question**	**How difficult is for you answering this question? (1-5)**	**How useful are the test materials for you? (1-5)**	**Valencia**	**Rotterdam**	**How much do you relate to these experiences? (1-5)**	**Your answers**
I. Collaboration strategy	StH Document 3. Supply side involvement (D.2.3)	How to drive supply side motivation into the market opportunity?	-	-	-	-	-	-
J. The motivations	StH Document 3. Supply side involvement (D.2.3)	Which are the motivations of the supply side profiles for engaging in the OSS renovation services network? Which is the message to orient supply capacities within the OSS context opportunity? Which are the correct channels to ensure their participation?			**Motivation**: (1) Informal, freelance and SME profiles: secure, better, more work. (2) Big companies: subsidies opportunity **Message:** "Be prepared, be on the list!" **Channels**: professionals and business associations and field campaigns	A renovation coordinator is needed to coordinate the work of several self-employed partners. More training is needed. Building sector is a booming business.		
K. The networks	StH Document 3. Supply side involvement (D.2.3)	Which measures can avoid the current fragmented market and lack of coordination? How can a services network be built?			Renovation agent or manager is required to apply for subsidies. Set of an official registry with a training program and validation exam to access. Agents connected through a forum.	Although there is a need for a renovation coordinator figure, the market is not as far to be able to set up a list of renovation contractors or renovation agents.		
L. The Packs	StH Document 5_Offer design (D2.5.)	Which packs of solutions are applicable in your context to ease the decision			Online tool renovEU: 9 renovation scenarios combining 4 measures,	Three routes:		

		making and allow for a fair and reliable comparison?			their energy, CO2 and comfort improvement and their cost with and without subsidies through an online simulation tool connected to the supplier's registry.	A. Individual path: its own path but they have to do all the work. B. Collective approach with simple measures: More people reached but low ambitions. C. Collectives organizations: higher ambitions, more people reached and HUB efforts more efficient.		

4. The StH customer Journey								
Sub-step	**Test materials (Deliverable)**	**Question**	**How difficult is for you answering this question? (1-5)**	**How useful are the test materials for you? (1-5)**	**Valencia**	**Rotterdam**	**How much do you relate to these experiences? (1-5)**	**Your answers**
M. Assistance strategy	StH Document 6_Implementation strategy (D3.2)	Which is your customer journey framework? Which functionalities do you intend to provide?	-	-	-	-	-	-
N. The services	StH Document 4. Supporting services map (D2.4)	Which are the existing local needs that will define the touchpoints and the sub-stops? Which are the existing resources (services, tools or activities) solving these touchpoints? Which are the gaps that will be developed to complete the assistance?			Need for awareness for the problem and existing solutions. Services had to be focused on the possibilities, availability, cost and benefits through success stories and predefined solutions. Result: services oriented to the first stages (onboarding and design)	Previous pop-up shops experiences. Now it is needed more local orientated actions in specific neighbourhoods. Focused on bottom-up initiatives and grow them to neighbourhood wide-activities.		
O. The tools	StH Document 6_Implementation strategy (D3.2)	Which tools are required to solve each service?			Existing Energy Office and 2 new offices, online tool for auto diagnosis, professionals' validated registry, training courses for property administrators and mediation for problems during renovation works.	Existing local organization Alex Energie. They use municipal buildings for community meeting. Members receive training. 'Buurmensen': Actual neighbours explain you the possibilities.		
P. The staff	StH Document 7_Staff training program (D3.6)	Which are the objectives and target groups for the training programme of your OSS?			Training program for the energy office staff with mandatory credits and problem-solving forum and technical training for property administrators.	No training program defined because Alex Energie is a voluntary based organization with no staff, only volunteers.		

5. The follow-up								
Sub-step	**Test materials (Deliverable)**	**Question**	**How difficult is for you answering this question? (1-5)**	**How useful are the test materials for you? (1-5)**	**Valencia**	**Rotterdam**	**How much do you relate to these experiences? (1-5)**	**Your answers**
Q. Sustainability strategy	Definition of OSS type (D3.3)	Which type of OSS do you have regarding its engagement level?			Medium-touch OSS: A: Technical advice C: Contracting advice S: Subsidies advice	High-touch OSS: A: Technical advice C: Contracting advice F: Financing S: Subsidies advice		
R. The business models	Business model canvas (D3.3)	How can your OSS be self-sufficient? Which is its business model?			Valencia OSS based on public funds and NG EU funds. The subsidies entailed in the funds are supposed to trigger the demand, stimulate market actors and implement a set of networks of OSSs across a target region or location.	The Hub will leverage on strategic partnerships in the short term to cater for the HOs demands. The business model must address the adaptations needed for the transition from a volunteer basis to a professionalized one		
S. The risk assessment	Risk assessment (D4.5)	Which are the potential risks of your OSS implementation. Which are their contingency plans?			Three main risks: - Lack of interest: solved by awareness campaigns, website, pop-up mobile energy office, Citizen's school, "best practices" map. - Overwhelming: solved by online diagnosis tool, personal appointments, subsidies comparison and advice, offers comparison. - Lack of trust: solved by a registry of validated professionals and	TBD		

					contractors, Citizen school.			
T. The performance	Monitoring: KPIs definition (D4.2) StH Document 8_Monitoring data templates (D3.8) Monitoring: Value (satisfaction) (D4.2.)	Which are the main KPIs to monitor the success of your OSS implementations and the customer satisfaction? How are these KPIs gathered and monitored?			Unique dashboard to unify data sources with a form addressed to the different actors in the data collection.	Rotterdam has no standard monitoring system. Lesson learned: monitoring should be a mandatory part of setting rules with other parties,		