# Save the Homes

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# 1 Executive Summary

The overall aim of **Sav€ the Homes** is to contribute to an increase of an annual renovation rate of > 5% by offering attractive OSS services to homeowners, managed and implemented by municipalities as being trustworthy entities for citizens. This is achieved by the implementation of OSS Citizen Hub concept, offering renovation offices, both as physical hubs and web-based virtual hubs at local level based on the concept of medium-sized cities and to maximize replicability, at national and EU level.

Sav€ the Homes will:

1. Offer a full customer journey in 5 stops:
   - Stop 0 Onboarding
   - Stop 1 Design: Social design by co-creation with the homeowners
   - Stop 2 Elaboration: Organizing the financing, purchasing of renovation kits and the preparations for the construction of the renovation works
   - Stop 3 Construction: Realization of proven quality in interaction with homeowners and a peer-to-peer Renovation Community, as part of the Citizen Hub
   - Stop 4 In-use: Monitoring of total performances in practice for ensuring sustainable quality of building and user experience
2. Create strong networks and trustworthy partnerships with local actors in the whole chain
3. Create locally developed and organized financing and investment pipelines

The integrated home renovation services will be established within already established OSS networks at the city (City of Rotterdam) and regional (Comunitat Valenciana) level in two EU countries, building upon existing energy targets and networks so far well established at the city levels where it brings a new method and mechanism on how to improve the existing interactions between the relevant organizations and stakeholders. It holistically connects renovation advisory, products and services, finance opportunities and legal advice with a building owner at a single point. By involving relevant EU umbrella organizations, the concept will be further promoted in other member states to come to a harmonized method applicable at EU level.

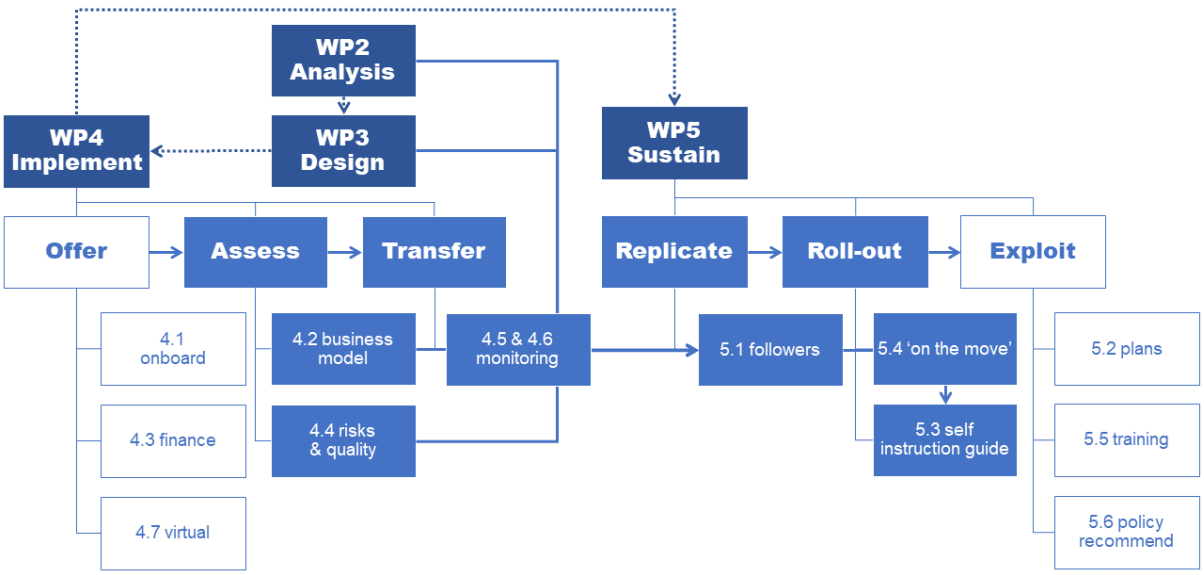



*Figure 1.- WP5 activities workflow*

The **WP5** objective is to ensure that the successfully validated Citizen Hub model (in WP4) is directly taken further and therefore ensures the increase of the renovation rates EU wide via the different networks on the following levels:

- On the one hand there is the exploitation and **promotion on a regional and national level**, with a pivotal role for the Sav€ the Homes Advisory Board working groups and the pilot networks.
- On the other hand, there is a **one-on-one**, but tailormade replication in two follower cities, Sant Cugat and Ljubljana, both linked to the main pilots.
- Finally, there is the **exploitation on an EU wide scale** towards the Sav€ the Homes main target groups through the two European umbrella organizations: homeowners / landlords / condominiums via UIPI and municipalities via ICLEI.

The objective of this task (**5.1**) is to test the replication of the Citizen Hub models developed for Valencia (ES) and Rotterdam (NL) for the two follower cities: Sant Cugat (ES) and Ljubljana (SI).

# 2 Introduction

This deliverable deals with the **one-on-one replication of the Citizen Hub models** developed for the pilot cities [Valencia (ES) and Rotterdam (NL)] by the two follower cities [Sant Cugat (ES) and Ljubljana (SI)] **in a double manner**:

1. **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.
2. **Between EU countries** where the Citizen Hub model fully deployed 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.

This two-fold realized replication process 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 the 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 (loop 1) will give a final review and feedback to come to the replicable Citizen Hub model used in exploitation.

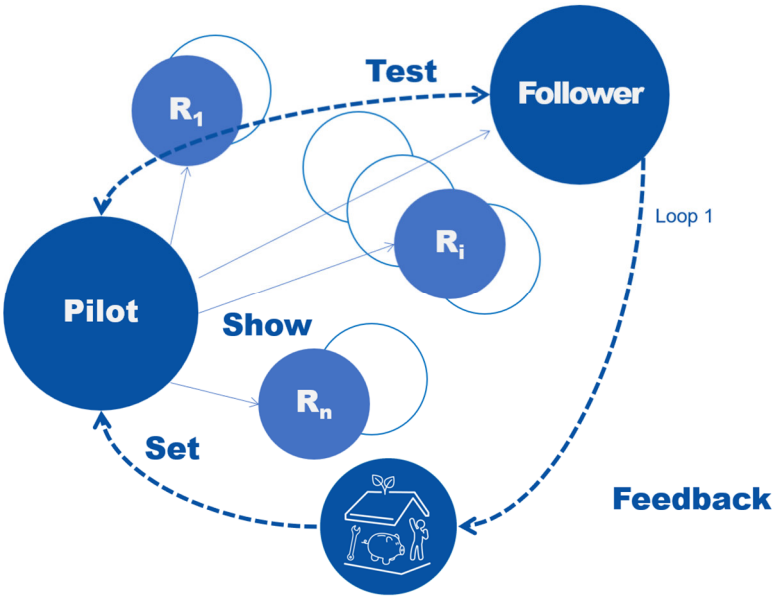



*Figure 2.- Loop 1 of the replication approach*

Therefore, this report starts with a review of the **set** pilots' OSS and how they can **show**/ share their process to other cities, regions or EU countries, including the follower cities; then the trying and **testing** activities developed specifically with those follower cities; and then the **feedback** provided, to be integrated into the replicable Citizen Hub model, conceived as a "follow the arrow" exploitation process.

# 3 Replication process approach

One of the objectives of the project is to increase housing renovation rates throughout the EU, **starting at the municipal level and moving up to the regional and national scales**.

While the approach to replication at the municipal level has been tailor-made in two follower cities, both linked to the main pilot cities, the regional and national levels have been addressed through the project working groups and pilot networks. At the European level, the approach is through two umbrella organizations, one dealing with homeowners / landlords / condominiums (UIPI) and the other with municipalities (ICLEI).

## 3.1 Scale

As described in the introduction, this report starts with a review of the set pilots' OSS and how to show/ share their process to **other cities, regions or EU countries, starting with the follower cities**; so, they can try and test the activities developed; and then provide useful feedback to be integrated into the replicable Citizen Hub model, conceived as a "follow the arrow" exploitation process.

Therefore, the replication of the OSS model developed in the Save the Homes project in other cities, regions or EU countries is performed in three different levels:

### A. Replication at the local level

Exploitation and promotion on a regional and national level, with a pivotal role for the Sav€ the Homes Advisory Board working groups and the pilot networks.

- **Same city**:
  - Valencia (replication: more Energy Offices in the city delivering same services)
  - Rotterdam (extension: different implementations with different purposes)
- **Different city but similar to pilot** (regional/ national level)
  - Valencia to Valencia Region (XALOC network at regional level)
  - Rotterdam to similar Dutch cities

### B. Replication at the national level

One-on-one, but tailormade replication in the same country follower city: 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:

- **The national scale** (the Spanish case in the project, with Valencia as pilot city and Sant Cugat del Vallés as follower city). The idea through this approach is to confirm to what extent the transfer and replication can be seamless when replicating the model in the same region/country

### C. Replication at EU level

One-on-one, but tailormade replication in a different EU country follower city:

- **The cross-country scale** (Slovenian follower city in the project, based on the experience of both pilot cities -Rotterdam and Valencia). The idea through this approach is the validation of the effectiveness of the replication process between different EU countries.

In both cases, a **thorough analysis and qualitative assessment** of the replication achieved from the pilot cities to the follower cities (and the bottlenecks) is necessary, which should lead to plans for further exploitation activities.

The intention is to continue the Citizen Hub blueprint and the implementation script provided by the pilots, with follower feedback being used to assess what works and what should be improved. Then, Replication/ exploitation board activities in T5.2 and 5.4 will conform the second validation loop 2.

## 3.2 Process

The process for the one-on-one replication of the Citizen Hub models developed for the pilot cities [Valencia (ES) and Rotterdam (NL)] by the two follower cities [Sant Cugat (ES) and Ljubljana (SI)] has four steps:

**A. Set**
**B. Show/Explain**
**C. Test**
**D. Feedback**

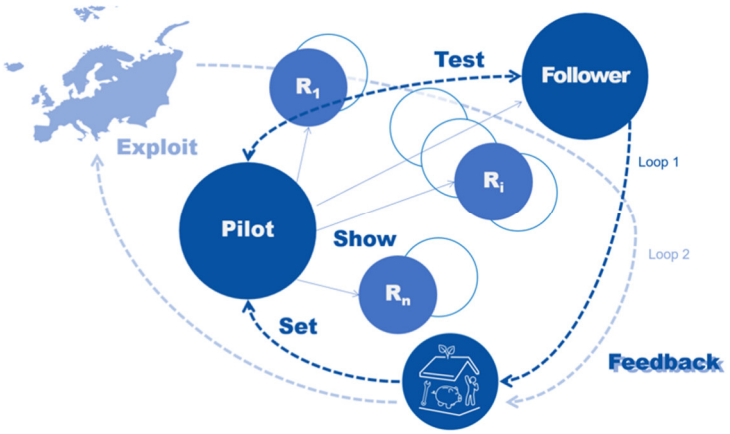



*Figure 3.- Replication process approach*

### A. Set

The first step of the replication process was the set of the Citizen Hub models in the two pilots located in two different European countries and with different social contexts. The development of the Citizen Hub model started with the demand and supply side mapping according to each location context (**WP2- Mapping demand and supply**). The demand side aggregation helps understanding who the customers are, their pain points and motivational drivers for the renovation. 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.

Once the demand and the supply side in each context is well known, the next step was the creation of the structure, procedures and network for the Citizen Hub integrated renovation services that are offered at the Citizen Hub facilitators for each pilot (**WP3 - Citizen Hub: Network, business model and investment pipelines**). It was important that the service providers to be able to connect both supply and demand and to offer the services that cover the whole 'customer journey', from market diagnosis (WP2), technical offer (WP2) to also structuring financing options and addressing regulatory aspects.

Finally, the next step was the demonstration of the holistic implementation of the previously developed Citizen Hub models, mapped knowledge, and prepared strategies at a single point (**WP4 - Citizen Hub Demonstration**).

It is important to highlight the differences between the two pilot's contexts, since it influenced how the Citizen Hub model developed was implemented in each case:

- In the case of **Valencia city pilot,** 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 geographical scope for this pilot experience is local at first instance, and then regional, as a replication phase.
Due to the singularities of the Valencian environment, the primary focus of the customer segment lies at the community of homeowners in multifamily buildings, as these represent the vast majority of the building stock dwellers in the municipality.

- In **Rotterdam**, 5 bottom-up initiatives were started the last years. One of these initiatives is Alex Energie, which is a subcontractor of the Save the Homes program. This entity is connected to the area, and it is who reaches out to citizens through people (volunteers) that can and are willing to act. In contrast to Valencia, the Rotterdam HUB will concentrate on single-family homes, as this is a large part of the area and in possession of individual homeowners.

## B. Show/ Explain

Once the OSS of Valencia and Rotterdam are successfully implemented, a protocol was developed to show other follower cities or regions the steps followed for the implementation of the Citizen Hub. 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 pilots' implementation. The implementation of the Citizen Hubs was summarized in 5 steps and 20 sub-steps (from A to T).

1. **Market segmentation – supply and demand:** mapping the current situation to understand the context at different scales: local, regional, national, and European level. It is investigated the demand side, the building segmentation, and the supply side.
2. **Demand side focus:** the demand side aggregation helps understanding the customer's profile. It helps defining the campaign strategy with the correct message and channels.
3. **Supply side focus:** supply side aggregation is necessary to provide optimal offer, improve trust and awareness of homeowners.
4. **The StH customer journey:** a customer journey framework is created to get a complete overview of all the touchpoints during the renovation process following the customer's decision-making process.
5. **The follow-up | Monitoring:** a protocol to ensure the continuation on the mid-long term of the Citizen Hub is defined measuring its success and requirements of improvements where needed.

## C. Test

In this phase, two specific workshops were carried out with the follower cities (Sant Cugat del Vallés and Ljubljana) to test the materials and activities developed for the previous listed replication steps.

In this test phase, **both follower cities were provided with the draft methodology** for the whole process **to assess its applicability** in their specific context:

- For **Sant Cugat del Vallés**, the assessment has been made on a **national scale** (both the pilot city, Valencia, and the follower city are located in the same country, Spain). The aim has been to analyse the benefits of having the structures and services developed in the same language and tailored to a national context.
- For **Ljubljana**, the assessment has been made on a **transnational level** (the follower city and the pilot cities are located in three different European countries). The objective has been to validate the effectiveness of the replication process between different EU countries where not only the languages are different, but also the contexts (and, consequently, the socio-economic and legislative frameworks).

Lessons learned from the replication of the pilot-to-follower cities are reflected in the project activities (**WP5 – Follow up replication and EU wide Exploitation**) to maximise and enhance the impact of replication and exploitation activities.

## D. Feedback

Section *"6 The feedback"* of this document details how gathering feedback from the follower cities - about the transferability and replication of the Citizen Hub concept developed- has been conducted. The collection of feedback was articulated mainly on two areas**:**

**1)** **Support material.** Extensive material has been specifically developed, **aligned with the 5 steps and 20 sub-steps of the project replication process**, to collect and obtain feedback.

Regarding these materials (apart from the images and infographics to be used in the OSSs, the presentations made for dissemination activities and the project reports and deliverables themselves), the **5-steps fact sheets,** with a general template and the example of Valencia as a pilot city, stand out as **specific material for collecting and obtaining feedback**.

**2)** **Follow-up activities**. These activities are just as important, if not more so, than the support material, since **it was within their framework that feedback was usually collected:**

- Project meetings as an exchange and update event, where both pilot and follower cities were able to exchange impressions with participating partners.
- Technical Workshops, mainly to support the development of the Citizen Hub itself.
- **Dedicated workshops**, **exclusive and independent for both follower cities, to evaluate the developed materials.**

The evaluation of the developed materials has been done **with a view to their potential to be offered to other cities and regions not familiar with the project**.

# 4 The show

This section describes the application of the protocol that was developed to show follower cities or regions the steps carried out for the implementation of the pilots' Citizen Hubs.

## 4.1 Main replication steps

The implementation of the Citizen Hubs can be summarized in the following 5 steps and 20 sub-steps (from A to T). The following sections are a summary of these steps, more information and how they were applied in the two pilots (Valencia and Rotterdam) is available in D4.9.

### 4.1.1 Market segmentation – supply and demand sides

#### A. The overall strategy

The first step is to **know the context by mapping and segmenting the demand, the buildings, and the supply** to allow for valuing relevance and prioritization. Then, on the selected segments, the behaviour, needs, and expectations are analysed to find an opportunity to trigger the renovation process or the use of the citizen hub.

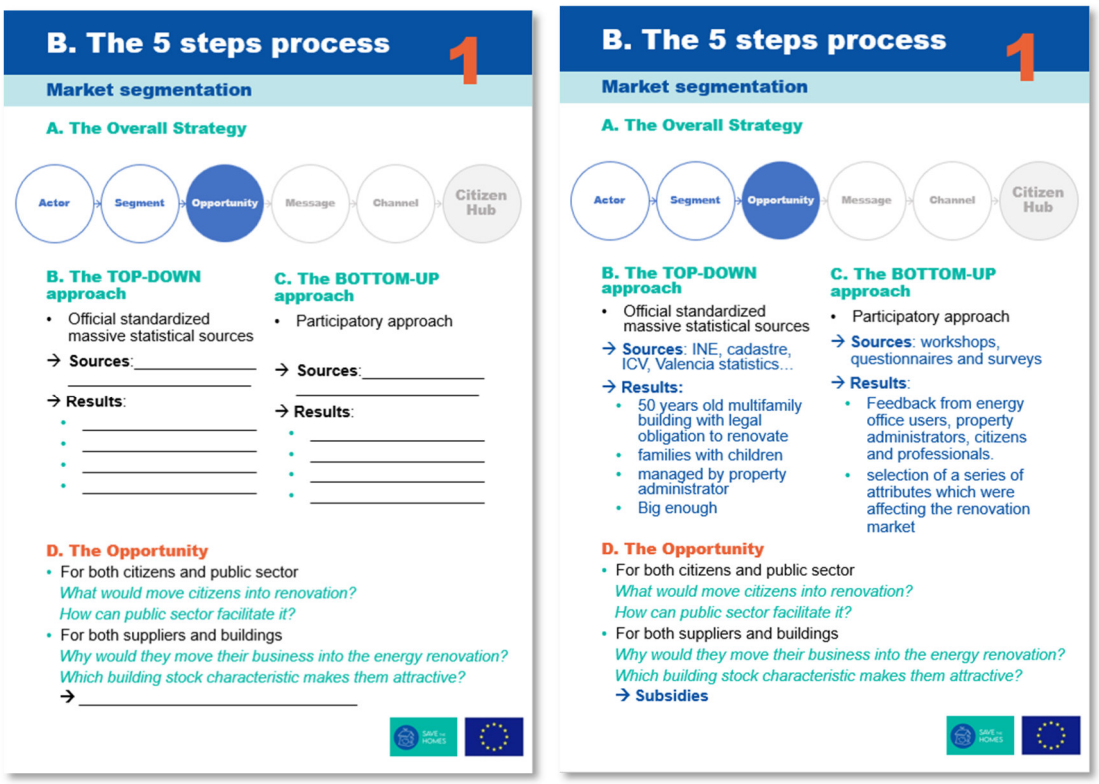



*Figure 4. Summary of step 1. Market segmentation (left: template; right: Valencia city pilot example)*

Top-down and bottom-up are both strategies of information processing and knowledge ordering. Both strategies are employed to map and segment the actors related to the renovation process:

### B. The top-down approach

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.

### C. The bottom-up approach

The bottom-up approach us 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.

### D. The opportunity

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. For demand side: what would move citizens into renovation, based on the analysed characteristics and how can public sector facilitate it; and for the supply side: why would they move their business into the energy renovation and which building stock characteristic or situation makes them attractive for suppliers to be interested in trying something on them.

## 4.1.2 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.

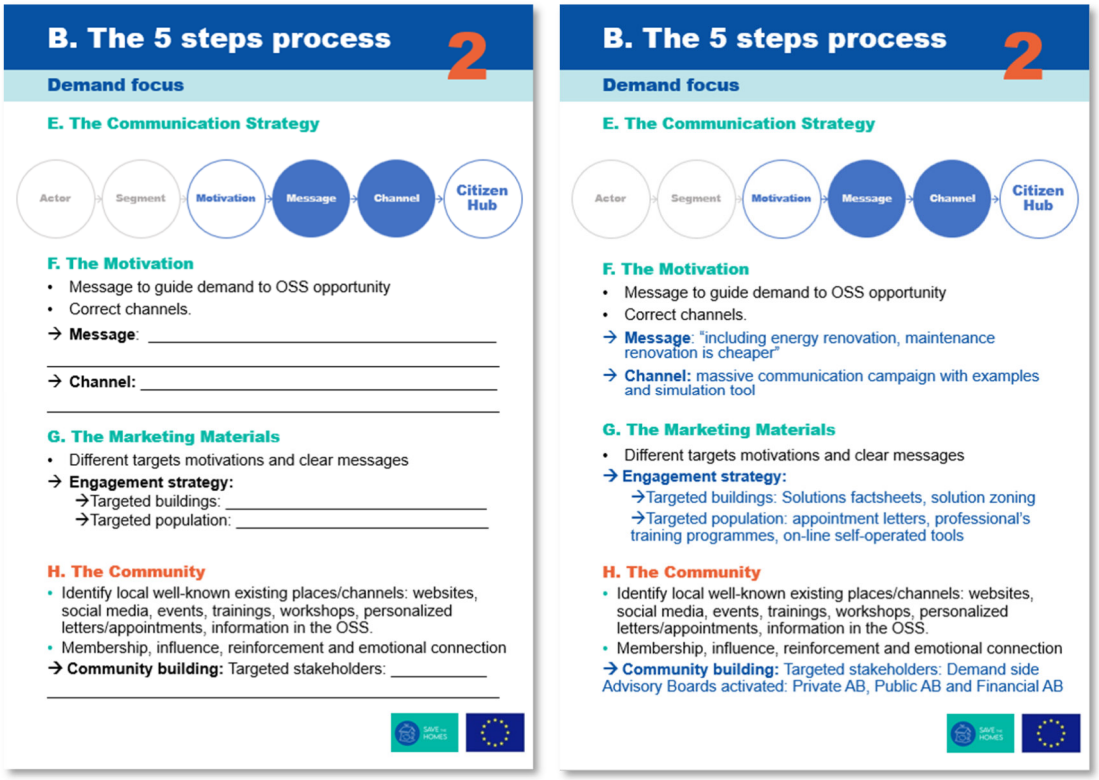



*Figure 5. Summary of step 2: Demand focus (left: template; right: Valencia pilot city example)*

### 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 design the **best fit messages and channels**, and around them, the roles of the different stakeholders, so the OSS delivers an integral service.

### F. The motivation

One of the first actions to undertake is to establish an accurate **diagnosis of the motivations of homeowners and occupants**. The previous analysis of the mapped demand is linked to the main motivations identified for undertaking home retrofitting activities. 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.

### G. The marketing materials

The marketing materials need to resonate with the **different targets motivations and clearly deliver the message**. Material for several steps of the specific customer journeys is prepared, depending on the needs of the one stop shop. Possibilities are for example: posters/ banners, infographics, stickers/ badges/ cards, renovation magazine/ brochure/ flyer, articles or videos.

### H. The community

The aim is to create and/or **grow the energy renovation community around or through the Citizen Hub services**. 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, social, events, trainings and workshops in OSS premises and homeowner's places or personalized letters/appointments offering solutions adapted to their building situation and possibilities.

It is important to involve local organizations in touch with targeted population, which have expertise in dealing and communicating with them to help defining the right approach techniques. In this sense, the Sav€ the Homes **Advisory Boards** (StHAB) have a pivotal role in establishing sustainable networks to support the local eco-systems.

## 4.1.3 Supply side focus

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. **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.

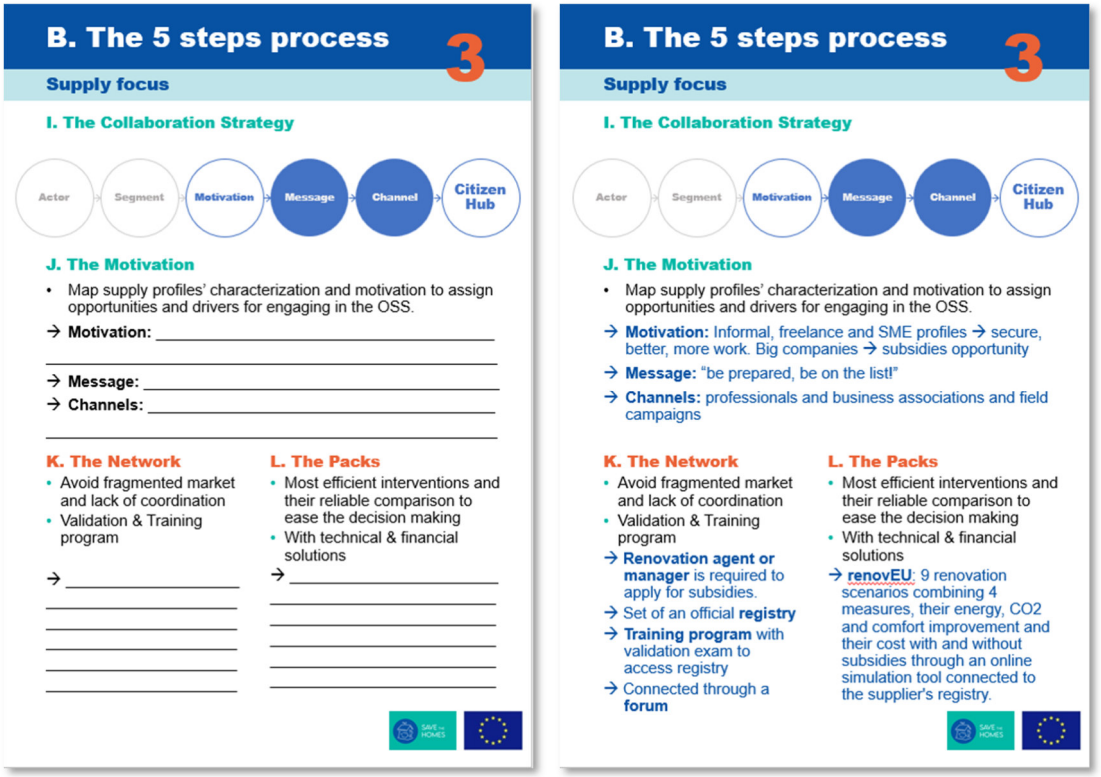



*Figure 6. Summary of step 3: Supply focus (left: template; right: Valencia pilot city example)*

## 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, so the OSS delivers trustable and qualified services.

## J. The motivation

In this sub-step, the supply profiles' characterization and motivation are mapped to assign **opportunities and drivers for engaging in the OSS**. 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. In this context, 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.

## 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.

Popular strategies are **validated registries or forums to solve problems** and increase trust while mainstreaming innovative technical solutions.

## L. The packs

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 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.

### 4.1.4 The StH customer Journey

A customer journey framework is created to get a **complete overview of all the touchpoints during the renovation process** and to see how people go through decision making. 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 and Each step has its own drivers and barriers which show the reasons for the potential customer to continue or to quit the process.

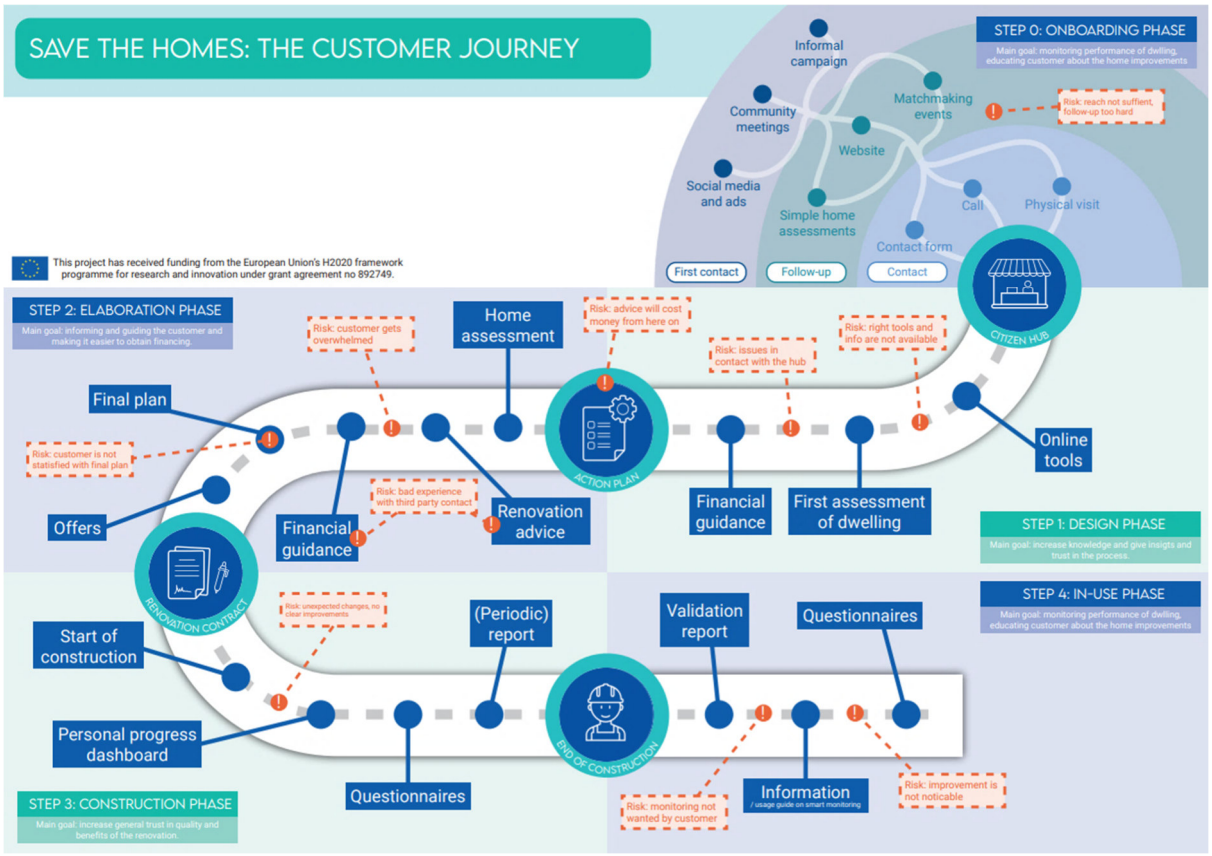



*Figure 7. The StH customer journey*

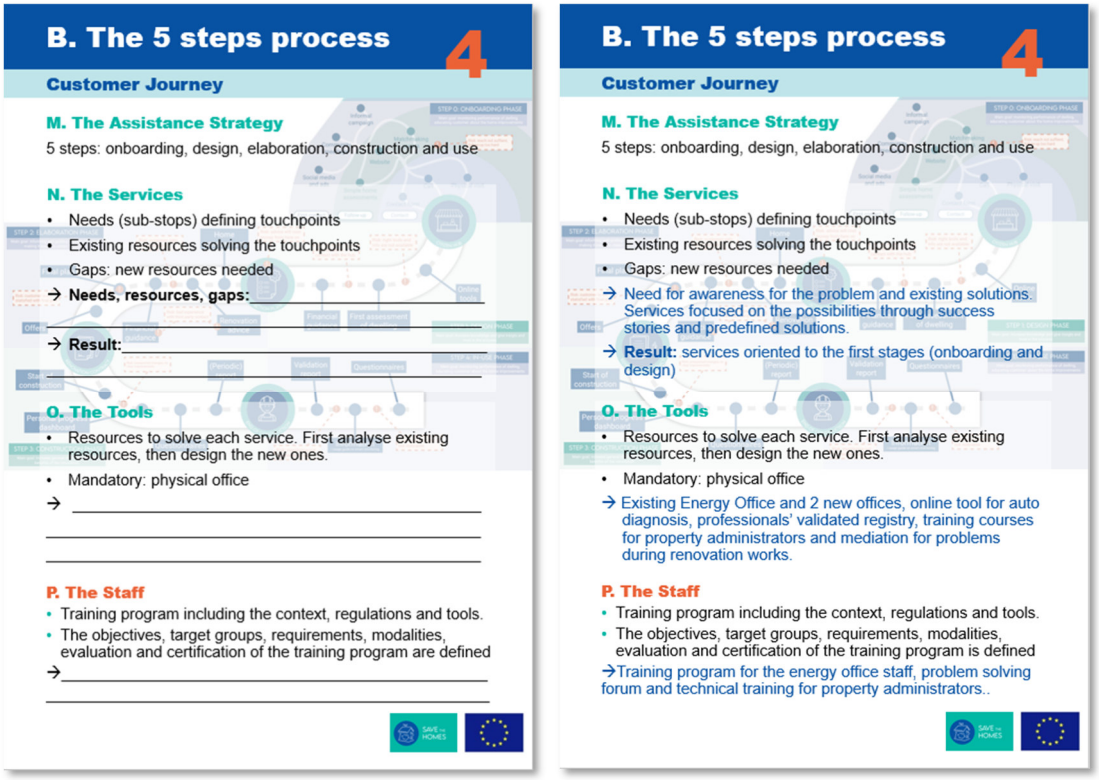



*Figure 8. Summary of step 4: The customer journey (left: template; right: Valencia pilot city example)*

### M. The assistance strategy

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. The sub-steps represent the actions in the journey where the customer actively undertakes the actions in the journey or is actively involved in them.

### N. The services

To define the StH customer journey, the **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, it is 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.

### O. The tools

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 so to fill the gaps.

One mandatory resource to be put in place is the physical office.

### P. The staff

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.

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.

## 4.1.5 The follow-up | Monitoring

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.

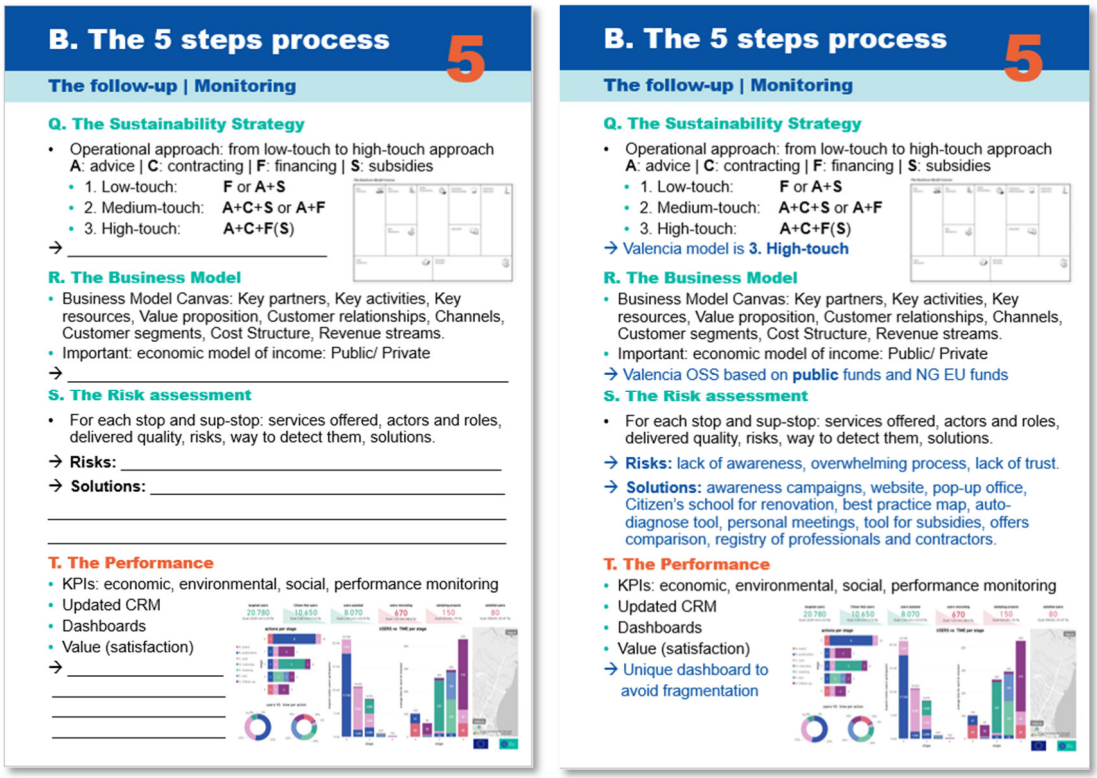



*Figure 9. Summary of step 5: The follow-up | Monitoring (left: template; right: Valencia pilot city example)*

### Q. The sustainability strategy

The goal is to identify the **strategy to set a self-sustainable model for home energy renovations**. The operational approach can be two-sided: a low-touch approach, characterized by several entities with low levels of cooperation and provided services, or a high-touch approach, which is a complete home renovation program managed by one entity that provides all the necessary services.

Integrated OSS programs 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

In order to **determine how the One-Stop-Shop (OSS) can be self-sufficient**, a specific business model is necessary. The Business Model Canvas (BMC) framework defines 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 and capture of value which describes how the organization generates revenue and profit.

### S. The risk assessment

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. For each stop and sub-stop previewed, It has to be define: the main service offered, the actors implementing them, the delivered quality sought, the risks related, the way to detect them and the potential solutions.

### T. The performance

The last task consists of developing the **KPIs and monitoring system/plan** including success rates of the Citizen Hub implementation, the satisfaction rate of the customers and the changes that have been necessary during the implementation of the project.

Good practices to correctly collect the data are looking for the key figures from the annual budgets, maintain an updated CRM (Customer relationship management), prepare a survey for customer follow-up and/or satisfaction and connect all of them to a dashboard tool representing the defined KPIs.

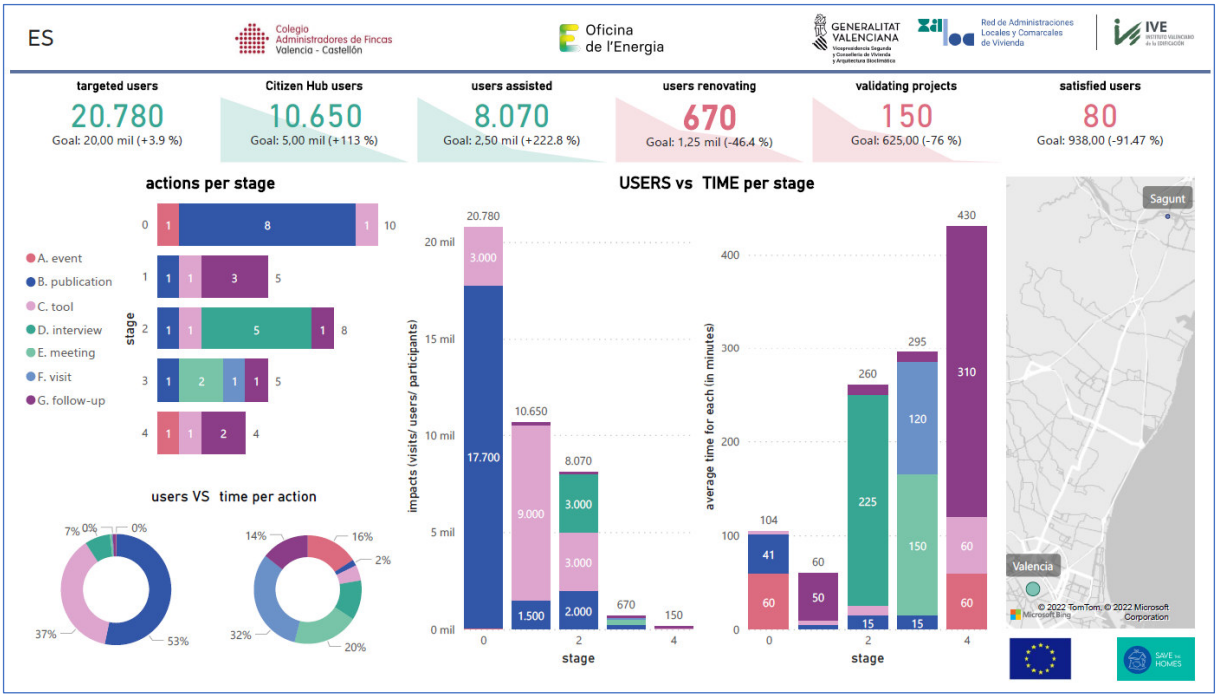



*Figure 10.- (Synthetic data) Spanish customer journey evaluation dashboard as an example*

## 4.2 The show materials

This section collects the materials used or to be used to show followers/ replicators what has been performed in the project by pilots. These comprises different categories, such as:

- Visits to the physical offices to watch their layout and daily functioning were performed in both consortium meetings taken place in Valencia (CM3 in September 2021 and CM7 in September 2023)


*Figure 11.- Valencia physical Offices*

- Images and infographics were developed and used in the Citizen Hubs with customers or in dissemination activities to explain the OSS

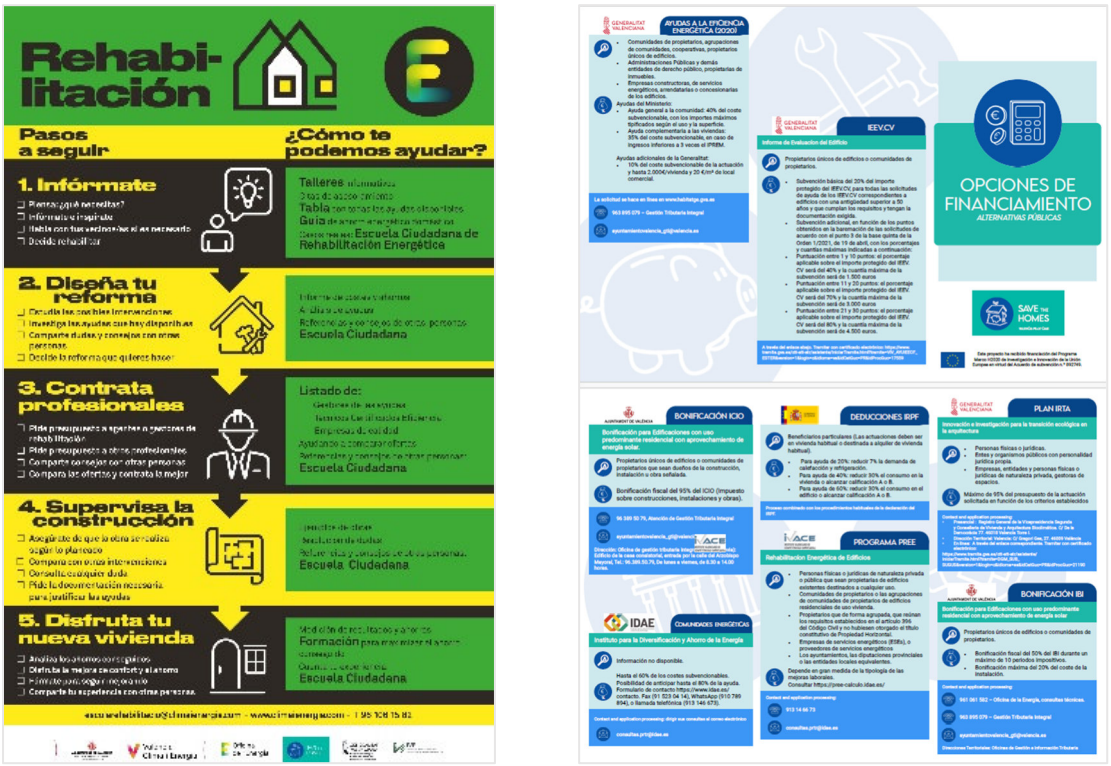



*Figure 12.- Valencia Energy Office Retrofitting Brochure*

- Presentations used for dissemination activities:


*Figure 13.- Presentation of StH approach to Universitat Rovira i Virgili in Catalonia*


*Figure 14.- Presentations for Padova fit event and Diputació de Barcelona*

- Reports (and deliverables) about performance of the OSS

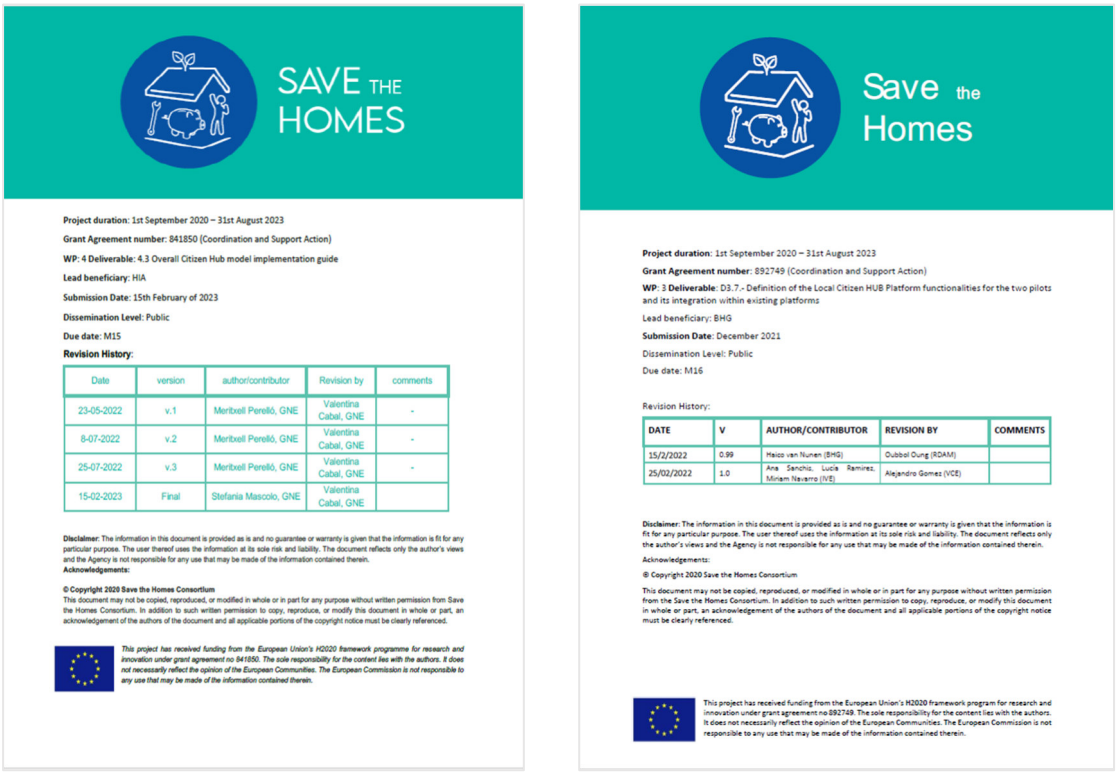



*Figure 15.- Covers of two deliverables developed within the framework of the project*

- The 5-steps fact sheets: general template and Valencia city pilot example. D4.9.

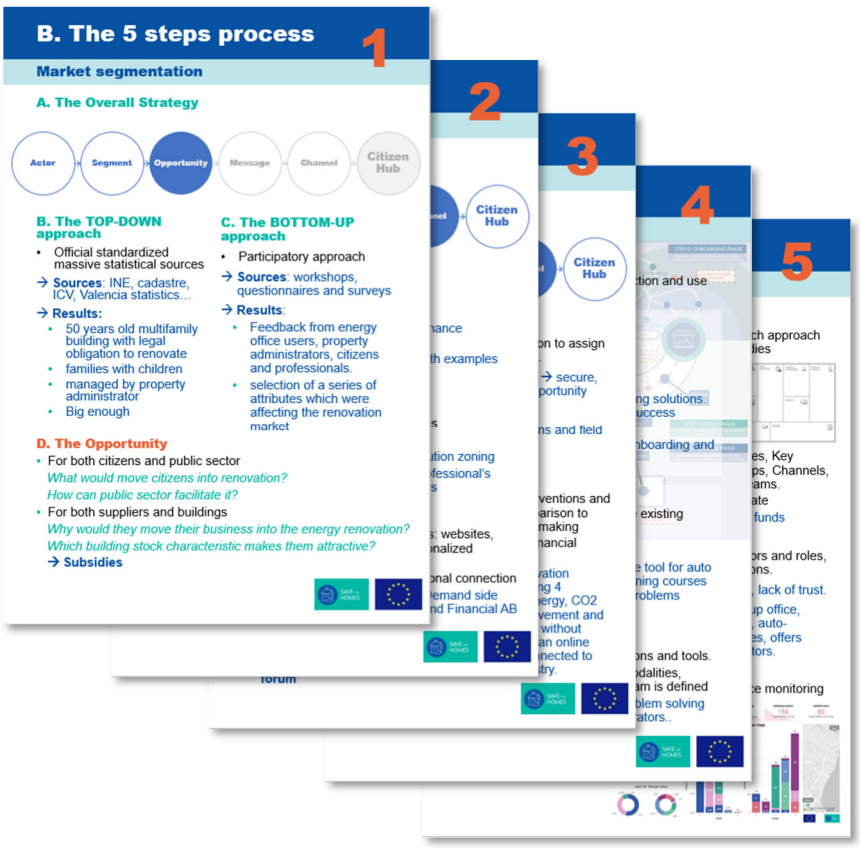



*Figure 16.- Factsheets for the 5 steps of the replication process developed within the framework of the project*

# 5 The test

According to Save the Homes 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.

So, 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) have been analysed to be replicated in the two follower cities, Sant Cugat (ES) and Ljubljana (SI), as explained in Section 3.1.

## 5.1 Activities

A set of activities have been carried out according to section 3.2 - Process, step C - Test, in order to share pilots' process and results collected in step A - Set, using step B - Show/ Explain conclusions and materials.

### 5.1.1 Following the project

Both follower cities have closely followed the development of the StH project, they have been aware of and updated on the city pilot activities, problems encountered, decisions taken during the project, etc., and they have been in fluent and close contact with all partners and, especially, with the partners related to the pilot cities. Both follower cities actively participated in the Consortium Meetings organized every 6 months., being two of them even organized in the two follower cities themselves.

*Figure 17.- Consortium meetings organized by the follower cities (Left: CM5 19,20 October 2022, San Cugat; Right: CM6 28, 29 March 2023, Ljubljana)*

Apart from the CMs as a sharing event with the rest of the participating partners and as a moment to update on the activities and progress of the project, the Technical Workshops could be considered as one of the most relevant/ useful activities for the follower cities. Within these Technical Workshops, mainly to support the development of the StH Citizen Hub itself, the follower cities have attended two of them, which were considered of great interest and usefulness for them due to the contents addressed:

- TW2 on the supply side and other Citizen Hub support services, which was held on-line on June 3, 2021. Three representatives from Sant Cugat attended.

- TW3 for the action plan, risk assessment and quality assurance of the renovation activities, as well as on engagement and recruitment campaigns for the two pilot cities, data monitoring and user satisfaction evaluation. It was held on March 21, 2022. Representatives from both Sant Cugat and Ljubljana attended.

Moreover, both follower cities were able during the project to compare their situations with the pilots' ones and start assessing their situation regarding the project experiences as they were going along.

## A. Sant Cugat del Vallés

Prior to the replication workshop and **throughout the development of the project, Sant Cugat had gained an understanding** of the barriers to renovate for homeowners in their city and linked these to the relevant challenges addressed by Save the Homes[1]:

By 2022, approximately a third of the population in Sant Cugat was starting to do some form of refurbishment to their dwelling, but this was not controlled or initiated by the Sant Cugat municipality. The refurbishment rate and the self-consumption of renewable energy was much higher for single-family homes than for multi-family buildings.

There were many tools and local initiatives already available, which were especially relevant for the onboarding, design, and elaboration phases in the customer journey. Some of these tools and initiatives came from the municipality of Sant Cugat, others were made available by private companies. The main challenge was that all these available initiatives were not linked together. One of the institutions in place was the Oficina Local d'habitatge (OLH), a local housing office, offering advice on aspects such as the housing stock market, renting houses, municipal housing developments, and also offering support for access to sheltered housing and rehabilitation of built houses. However, the OLH did not work in the area of energy efficiency or home renovation.

It was important to create a local (energy) office linking all the current initiatives together and making it possible to strengthen and mobilise these valuable initiatives.

The idea was that the customer journey methodology as set up for Save the Homes would help in making the process more aligned to the steps home renovators take and in bringing different actors together. The customer journey also gives insights in how other cities (Rotterdam, Valencia) are approaching the One Stop Shop concept and how barriers are overcome in these cities. As a follow up to this, meetings were planned for the municipalities to compare their customer journey and One Stop Shop approach so they could learn from each other and see if they could overcome similar barriers together.

Aso in 2022, about one year before the replication workshop, Sant Cugat del Vallés tested an **early replication process test** consisting of a very simplified enumeration of activities performed by pilots by that time.

[1] Based on project documents *D3.1 – Home renovation customer journey methodology and elaboration for the two pilots* and *D3.2 – Strategy and structure to implement the Citizen Hub concept for the two pilots*)

| T5.1. Replication guideline based on the lessons learnt from the follower cities | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | pilots | followers | | | | | | |
| | steps | done | when | planned | for | analysed | pending | comments |
| 1 | Demand and supply side **mapping** | YES | partially finished 2021 | YES | | YES | YES | We followed D2.1 mapping methodology instructions and also annex mapping checklist. We selected the attributes of buildings and diferent local tools (Open Sant Cugat), EPC, solar roof potential, map of level of building heat leaks and thermal insulation for massive characterization and segmentation. We have a first list of 5245 inefficient buildings identified from a previews european project (ENERPAT ENERHAT). We still have to locate them by neighbourhoods. We do not have complete information about supply side because we do not have OSS or any local registration. We do have a list of promoters, companies and freelancers extracted from city council refurbishment and new buildings local permits. We also have www.habitissimo.es a private webtool. |
| 2 | Long-term citizen **engagement** strategies | NO | | YES | 2023 | YES | YES | Long term citizen engagement are: IBI tax reductions for PV pannels, refurbishment subsidies from spanish government and tax credits. We are working in online tools as Renoveu, GIS solar potential roofs and www.somcomunitatenergetica.cat (website where you can share information about local energy communities). We will start online and physical workshop for the citizens to learn how to use these online tools. We will use Valencia tools for surveys and excel file costs calculation. |
| 3 | Supply side community building and **network** creation | NO | | NO | | YES | YES | The network creation campaigns will be designed on the basis of the previous inquiry's outcomes to form efficient tailored campaigns that work on a local level including the most effective measures depending on the pilot context. The idea is to not be seen as a stand-alone measure, but a part of a long-term local strategy with supply side. it will be builded on the rooting of the communication strategies (T6.4 marketing materials and T3.5 the staff Training Program), on the local context. |
| 4 | **protocols & methods** for quality control (including skills) and performance monitoring | NO | | YES | 2023 | YES | YES | From single measure implementation to a deep retrofitting: low maintanance, economical, comfort and low energy consumption.To increase trust and ensure sufficient quality, these solutions will be verified to assess their applicability which can ease the decision making as also allows for a fair and reliable comparison between the solutions. 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. |
| 5 | Suitable **renovation packages** and supporting services for the two pilots | YES | 2023 | YES | | YES | YES | For each targeted building typologies we could more easily act to improve: inefficient (red map) buildings, all bad roof, no heating and PV roof potencial > 30m2. 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. As part of the Citizen Hub services, energy retrofitting products and services will be clustered to reduce fragmentation of the renovation process. |
| 6 | Strategy and structure to implement the Citizen Hub concept (**customer journey**) | NO | | YES | 2023 | YES | YES | We need funds for a contract program to set up a physical office to serve owners and entities (association of end users and consumers) in Sant Cugat. |
| 7 | Citizen Hub **business model** | NO | | NO | | YES | YES | All the actors, messages, channels, allies and activities are put together so to understand the next actions needed to perform, the resources to be committed, and contacts to be made, in the pilot field activities. |
| 8 | Mapped suitable **financing initiatives** | NO | | NO | | YES | YES | Not started |
| 9 | **Staff training** programme | NO | | YES | 2022 | YES | YES | AMB (Barcelona Metropolitan Area) has started a specific online training for Local Energy Communities and FV for different municipalities staff. |
| 10 | Definition of **functionalities** and its integration within existing platforms | NO | | NO | | YES | YES | Not started |
| 11 | Data **monitoring plan** | NO | | NO | | YES | YES | Not started |

*Table 1.- Early followers test by Sant Cugat del Vallés*

This early version was finally dismissed as an official StH testing material, but the exercise led Sant Cugat to consider that the mains steps followed or to be followed by them for replication were / would be[2]:

1 Demand and supply side mapping *(partially finished in 2021)*.
2 Long-term citizen engagement strategies *(planned for 2023).*
4 Protocols & methods for quality control (including skills) and performance monitoring *(to be done).*
5 Suitable renovation packages and supporting services for the two pilots *(to be finished in 2023).*
6 Strategy and structure to implement the Citizen Hub concept (customer journey) *(to be done).*
9 Staff training programme *(to be finished).*

Some of the steps which they already indicated they would not implement were:

3 Supply side community building and network creation
7 Citizen Hub business model
8 Mapped suitable financing initiatives
10 Definition of functionalities and its integration within existing platforms
11 Data monitoring plan

It is worth mentioning that the implementation / non implementation of the previous steps was based on the prior analysis of all of them by the city itself.

[2] Based on project document "*5-1-SantCugat_FollowersTest.xls*"

## B. Ljubljana

Prior to the dedicated workshop, a **session on the state and future of the Slovenian renovation market** had been held in May 2023. Although the contents of the meeting were also national in scope and not specific to the issue of housing retrofitting in the city of Ljubljana, they are included here for their usefulness in understanding the approach adopted by them as a follower city in terms of the actions of the CJ that may / may not be implemented.

The mentioned session was organized by the City of Ljubljana and was attended by representatives of relevant entities in the context, such as the Institute for Innovation and Development of the University of Ljubljana, the Ministry of Environment, Climate and Energy (MOPE) and Ekosklad as national entities, and local communities. The key topic was the establishment of "One Stop Shop" points for the renovation of residential buildings. The goal was to look for solutions on how the ecosystem of stakeholders could help in establishing them in Slovenia based on their knowledge of the specifics and considering other practices from EU countries. Some relevant insights about the Slovenian context were presented by the participants[3]:

- The good practices of renovation carried out in public buildings in Ljubljana according to the principle of contracting the energy consumption. Some challenges were also listed, such as the small number of ESCO companies, resulting in limited competition (by Petra Šeme, energy manager of CoL).
- The participation of Ljubljana in the mission of 100 climate-neutral and smart cities. The routes and various strategies being prepared were presented (by Nataša Jazbinšek Seršen, Head of the Department for Environmental Protection at the Municipality of Ljubljana).
- The experiences of representatives of local communities and their activities in the field of building renovation and climate change promotion (by Marko Hočevar, of the municipality of Kranj; Jakob Smolič, from the municipality of Zagorje ob Savi and Andrej Hrabar, from the municipality of Koper).
- The proposal of the National Energy and Climate Plan (NEPN), which is being updated this year, and how European policies are included into national legislation (by Gregor Rome, representative of the MOPE). As Slovenia's and Europe's strategy is to end the use of fossil fuels, a ban on the installation of new extra-light fuel oil boilers is in force in Slovenia, and a ban on the installation of gas boilers in new buildings is expected in 2025. Europe has committed to a 15% reduction in gas consumption. In the medium term, member states must restore all buildings that are classified in the two lowest classes defined in energy certificates. One of the challenges in Slovenia is dispersed ownership in multi-apartment buildings.
- The continuation of subsidies being awarded for financing measures for efficient energy use and incentives for the construction of highly efficient, almost zero-energy buildings, as well as support for the purchase of electric vehicles, by Eco Fund (by Tjaša Bandelj, coordinator of the EnSvet network (Network of energy consultants) from the Eco Fund).
- The outlook on energy renovation trends and context of the residential building stock in Slovenia (by Marko Umberger, CoL's consultant in the field of energy):
  - There are about 300,000 houses, of which 60% are potentially easy to renovate to almost zero-energy, and potentially self-sufficient with an additional solar plant.
  - The potential of houses being renovated in a technically simple way.
  - The lack of an office for the energy renovation of residential buildings, contrary to public buildings.

[3] Based on internal project document *"StH MOL maj23_ENG.docx"*

- The non-existence of statistical data on the renovation of residential buildings, as permits are not required.
- The existing technical and organizational challenges for multi-apartment buildings (considering that there are about 17 million sqm of multi-apartment buildings in the country and 47 million sqm of single-apartment buildings). Some renovation actions are highly costly (in economic terms) which leads to focus on single-family houses.
- The energy renovation still representing a small share of the renovation actions.

Also, interesting and potentially useful were the conclusions drawn from the final discussion among all the participants, such as:

- The common agreement that the Ensvet network was the best base for establishing all-in-one points in Slovenia, and that a pilot and network reinforcement are needed.
- The questionability of whether the license condition for issuing energy certificates was adequate for proving the competence of the consultant, who is becoming a technical coordinator or a kind of building renovation supervisor.
- The idea of joint orders for energy renovation measures and the use of renewable energy sources in certain locations to attract larger renovation companies, which are ultimately cheaper.
- The lack of competence of managers of multi-apartment buildings to manage energy renovation.

All in all, it should be noted that the previous workshop could be considered the first meeting of stakeholders to establish a one-stop-shop in Slovenia.

## 5.1.2 Trying project steps

Besides following the project, both follower cities have started assessing the pilots and project steps under an unstructured way, comparing their situations with the pilots' ones. This preparation has been very useful for the transferability assessment and the performance in the specific, structured under D4.9 and this very D5.1, replication workshops.

Therefore, a workshop with each follower city has been organized in order to show the materials about the citizen hub implementation following the model developed in the StH project. During the workshop, D4.9. was discussed with the follower cities, explaining the 5-steps process. To complement the explanation, the 5-step process factsheets were shared and explained. Besides, the DIY templates were presented, and the follower cities were encouraged to try to complete them. All possible doubts were solved during the workshop. The following sections summarize the workshop session with each follower city.

Follower cities experience these workshops allowing the project to test the potential replication and transferability of the performed experiences in a closed format, with a view on the potential of this kind of workshop when offered to other cities or regions which have not been following the project, as it will happened during T5.2 and T5.4 activities.

### A. Sant Cugat del Vallés

Sant Cugat del Valles specific activities in order to try and/or test Save the Homes citizen Hub setting up steps concluded with the celebration of a **dedicated workshop**, which took place on-line on September 13, 2023.

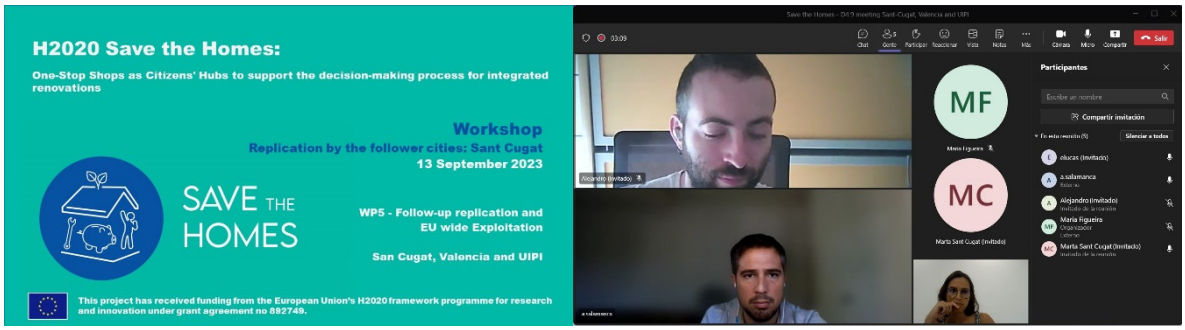



*Figure 18.- Replication workshop with Sant Cugat del Vallés (13 September 2023, on-line)*

In the framework of this workshop, the city of Sant Cugat expressed that the steps and sub-steps of the transferability process were well defined, even though they found it difficult to answer/implement the sub-steps on suppliers and follow-up and also missing a sub-step for political engagement. As for the materials for transferability, they found them useful and easy to use (with the exception of the DIY templates, for which in some specific cases they said they needed help to complete them, and the Blueprint & Implementation Script, where, in their opinion, there were too many questions). In general, they agreed that the material was sufficient and, as a note, added the need for it to be translated into the local language. The conclusions and main observations obtained in the workshop are analysed in greater detail in section 6.2 - The results of this document.

## B. Ljubljana

Ljubljana specific activities in order to try and/or test Save the Homes citizen Hub setting up steps concluded with the celebration of a **dedicated workshop** , which took place on-line on September 14, 2023.

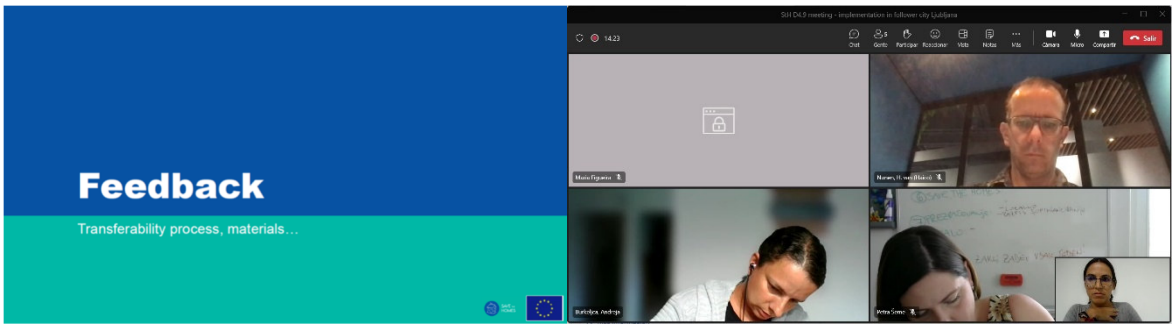



*Figure 19.- Replication workshop with Ljubljana (14 September 2023, on-line)*

In the framework of this workshop, the city of Ljubljana expressed that the steps and sub-steps of the transferability process made sense to them, even though they found it difficult to answer/implement the sub-steps connected to mapping the building owners -specially their economic and social status. Regarding the materials for transferability, they found them useful and easy to use (especially because of the inclusion of examples). They only pointed out the possible usefulness of including a column with the location of the material for each sub-step in the DIY templates and a value (e.g., 1-worst to 5-best) in the Blueprint & Implementation Script. In general, they agreed that the material was sufficient and, as a note, added that it would make sense to include a brief one-page summary of the instructions.

The conclusions and main observations obtained in the workshop are analysed in greater detail in section 6.2 - The results of this document.

### 5.1.3 Discussing the project outcomes

Finally, it was decided that a meeting with both the two follower cities was worth, and a dedicated workshop was held during the 7th consortium meeting in Valencia, so also the pilot cities representatives and other partners related to the definition and roadshow activities would be involved.

The main data (attendees and agenda) on the sessions held with both follower cities in the replication workshops can be seen by way of summary and graphically in the following figure, based on the data shared at the 7th project CM held in Valencia in September 2023:

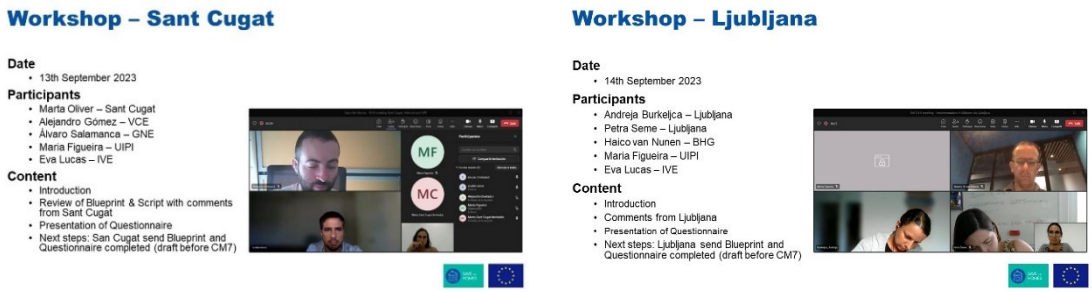



*Figure 20.- Overview on the replication workshops with the follower cities shared in the 7CM (20 September 2023, Valencia)*

The conclusions and main observations obtained in the workshops and shared and discussed here are analysed in greater detail in section 6.2 - The results of this document.

## 5.2 Test materials

During the whole process of the development of the Citizen Hub model, DIY templates were prepared to allow the follower cities know how to implement the different steps of the process. These templates are available in the corresponding deliverables, and they are all compiled in the Annex 2 of D4.9. Besides, in this Annex 2, an example of how the follower cities have used this DIY template table is provided to easy the implementation of the protocol.

The following table shows, for each sub-step of the 5-steps implementation process, the corresponding material (there is a DIY template for each sub-step), and the location in the corresponding deliverable. In each deliverable, more information about each sub-step can be found for both pilot cities:

| 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.*

As an example, this would be the way to use the table:

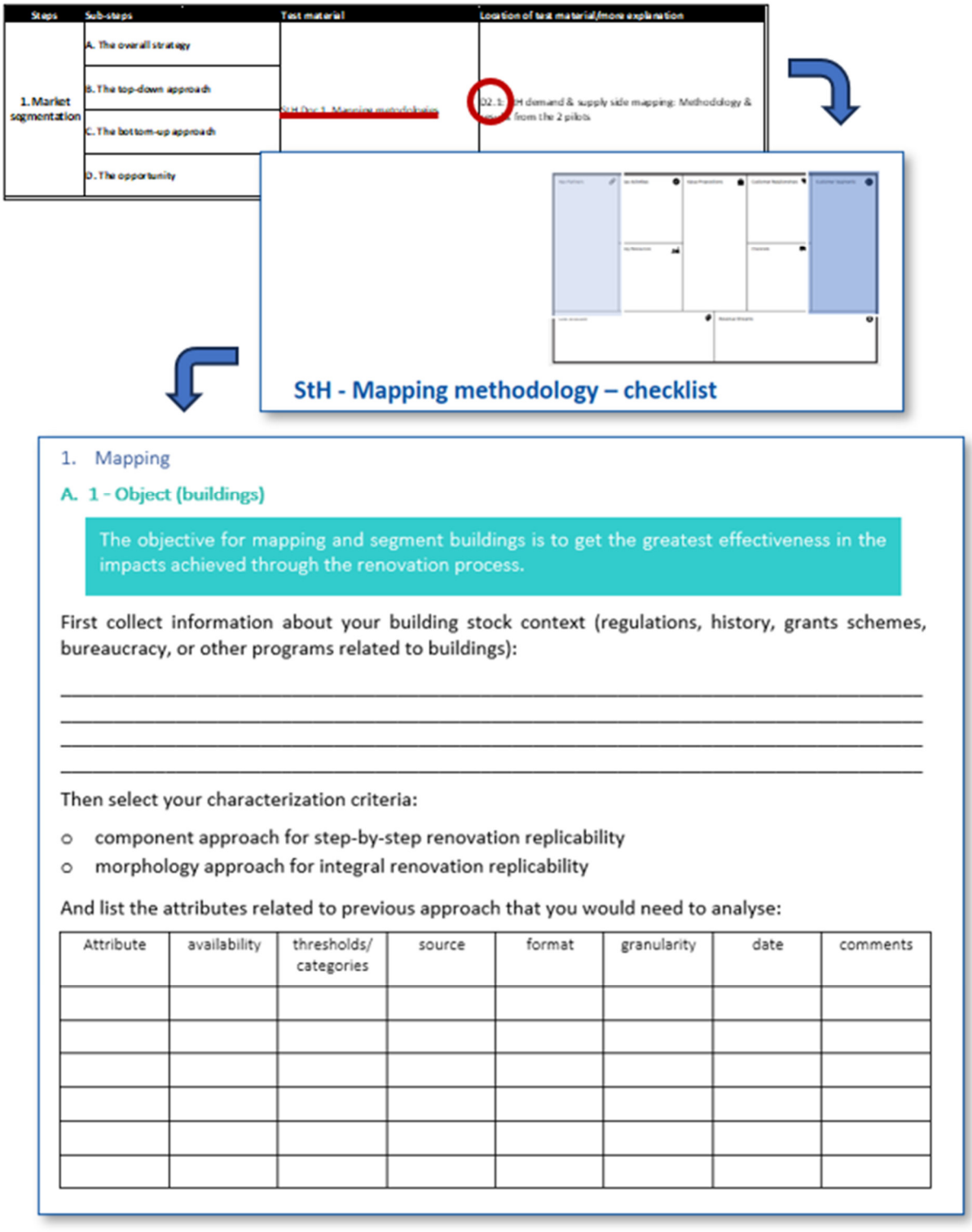



*Figure 22.- Use of the test materials table: example for test material and location for a specific step + associated DIY template*

# 6 The feedback

As explained earlier, one of the objectives of the Save the Homes project has been to demonstrate the potential of the developed Citizen Hub concept to other municipalities and to further expand the business model.

To this end, the two follower cities of the project -Sant Cugat del Vallés (ES) and Ljublana (SI)-, started an assessment of the pilot cities of the project -Valencia (ES) and Rotterdam (NL). This assessment was carried out based in the comparation of their situations with those of the pilot cities, in the framework of the activities mentioned in Section 5.1.

In addition to a description of the channels and procedures developed/employed for these activities, the following is an analysis of the feedback provided by each follower city during them.

## 6.1 Channels & procedures

The feedback is collected using The Citizen Hub blueprint & implementation script (available in Annex 3 of D4.9). This table is shown to the follower cities after the show materials with the 5-steps process and its sub-steps, and after they try to fill the test materials based on the DIY templates developed during the project. This table tries to summarize the whole implementation process showing:

- The steps followed by the pilots to implement the CH model.
- The corresponding test material and its location (corresponding deliverable)
- The question that each sub-step tries to answer.
- The answer to this question for the two pilot cities

The feedback provided by both cities is based on their response to the following questions for each sub-step:

1) **MARKET SEGMENTATION – Supply and demand sides**
   a. **<u>The overall strategy:</u>**
      - *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?*
   b. **<u>The top-down approach:</u>**
      - *Which are your official/statistical **data sources**?*
      - *How can you **combine and filter** them in order to qualify, quantify and measure your targets?*
   c. **<u>The bottom-up approach:</u>**
      - *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?*
   d. **<u>The opportunity:</u>**
      - *What would move citizens into renovation?*
      - *Why would **move suppliers** into the energy renovation?*

**2) DEMAND SIDE FOCUS**

**e. <u>The communication strategy</u>**

- *How to **drive demand side motivation** into the market opportunity?*

**f. <u>The motivation</u>**

- *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?*

**g. <u>The marketing materials</u>**

- *Which are the correct marketing **materials and activities** to resonate with the different target motivations and clearly deliver the message?*

**h. <u>The community</u>**

- *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?*

**3) SUPPLY SIDE FOCUS**

**i. <u>The collaboration strategy:</u>**

- *How to drive **supply side motivation** into the market opportunity?*

**j. <u>The motivation:</u>**

- *Which are the motivations of the **supply side profiles** for engaging in the OSS renovation services network?*
- *Which is the **message** to orient supply side capacities within the OSS context opportunity?*
- *Which are the correct **channels** to ensure their participation?*

**k. <u>The network:</u>**

- *Which **measures** can avoid the current fragmented market and lack of coordination?*
- *How can a services network **be built**?*

**l. <u>The packs:</u>**

- *Which packs of **solutions are applicable in your context** to ease the decision making and allow for a fair and reliable comparison?*

**4) StH CUSTOMER JOURNEY**

**m. <u>The assistance strategy:</u>**

- *Which is your customer journey **framework**? Which functionalities do you intend to provide?*

**n. <u>The services:</u>**

- *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?*

**o. <u>The tools:</u>**

- *Which tools are **required** to solve each service?*

**p. <u>The staff:</u>**

- *Which are the **objectives and target groups for the training programme** of your OSS?*

**5) THE FOLLOW UP**

**q. <u>The sustainability strategy:</u>**

- *Which type of OSS do you have regarding its **engagement level**?*

**r. <u>The business model:</u>**

- *How can your OSS be **self-sufficient**?*
- *Which is its **business model**?*

**s. <u>The risk assessment:</u>**

- *Which are the **potential risks** of your OSS implementation?*
- *Which are their **contingency plans**?*

t. **The performance:**

- *Which are the **main KPIs** to monitor the success of your OSS implementation and the customer satisfaction?*
- *How are these KPIs **gathered and monitored**?*

## 6.2 The results

The following is an analysis of the follower cities' responses to the previous set of questions. Their answers, as well as other observations made during the sessions with both follower cities in the framework of the project, have served to detect their main difficulties in (planning) the implementation of the StH Citizen Hub model.

Besides knowing the situation of both cities independently, the objective of the analysis of their feedback has been to try to locate common points and discrepancies in reference to the implementation process, as well as weak points and other aspects to be considered for replication based on their experience. Analysing feedback

For the analysis of the feedback provided by each follower city in its specific workshop, the content provided in the template/ table above has been considered. As seen, the table above is structured in the 20 sub-steps of the replication process. The following scheme facilitates the correlation of these 20 sub-steps (from a) to t)) with the 5 main steps of the procedure (from 1 to 5):

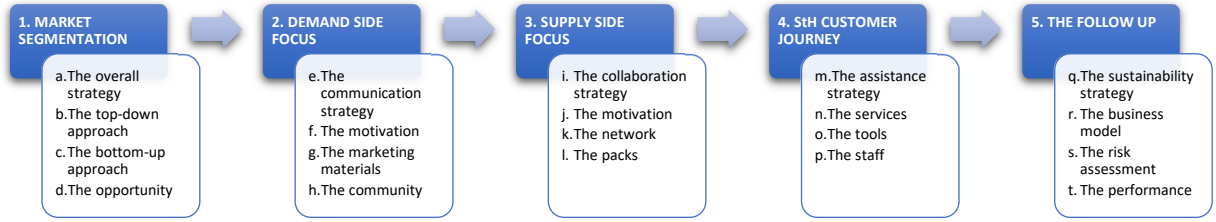
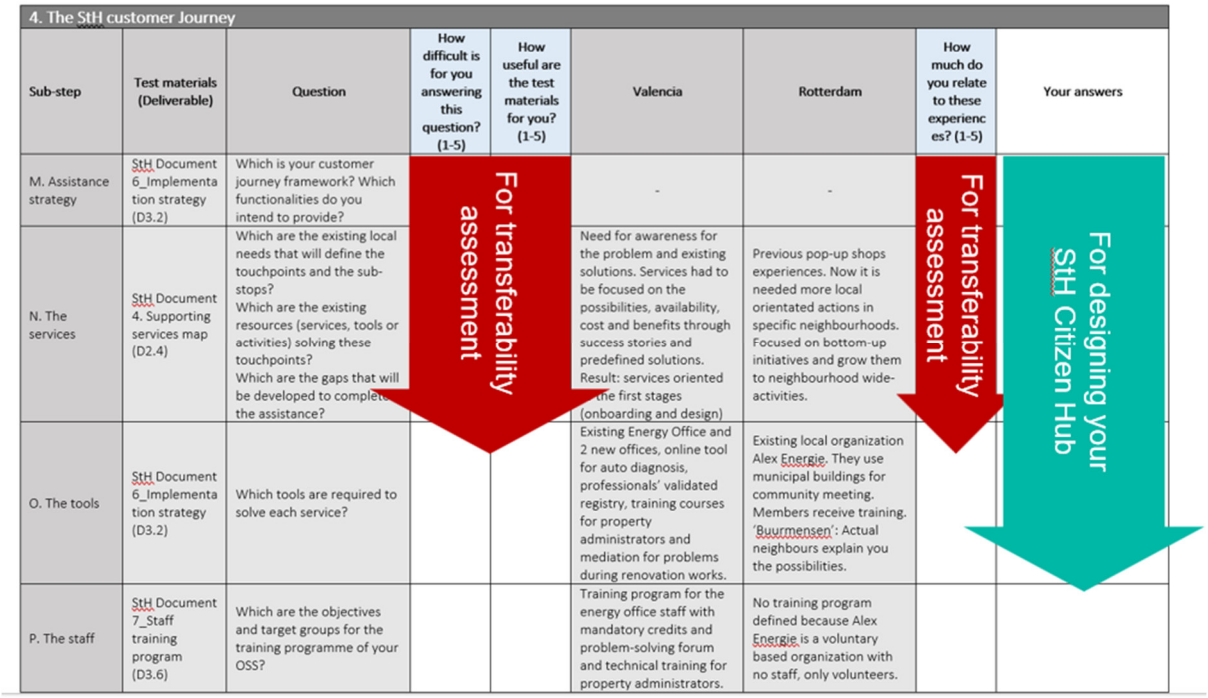



*Figure 23.- The StH Customer Journey: steps and sub-steps of the replication process*

The table asks for the follower city's answer with two approaches:

- The answer to the sub-step's question, aiming to help the design their own Citizen Hub
- Their feedback to intermediate questions, aiming for a transferability assessment:
  - How difficult is for you answering this question? (1-5)
  - How useful are the test materials for you? (1-5)
  - How much do you relate to these experiences? (1-5)



| 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?<br>Which are the existing resources (services, tools or activities) solving these touchpoints?<br>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 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. | | |



*Figure 24.- Blueprint & implementation script purpose*

## 6.2.1 Designing new Citizen Hubs

Based on las columns' answers, both follower cities were able to envision the shape of a potential citizen Hub implementation in their context, together with the effort, objectives and challenges of its deployment.

### A. Sant Cugat

The answers provided by Sant Cugat del Vallés are included below, organized by steps and sub-steps.

**1) MARKET SEGMENTATION**

a. **The overall strategy**. Their primary focus is on multifamily buildings (like Valencia) where families are managed by professional property management services. They have limited information regarding suppliers specialized in retrofitting within the city, but a better understanding of solar energy companies. In Sant Cugat, renovation actions in multifamily buildings have been proceeded without the need for city council permits.

b. **The top-down approach**. They use the Open Sant Cugat GIS tool to access a range of valuable geographical data sources (including the Cadastre, Energy Efficiency building maps, ICGC heat leaks map of buildings, and information on the suitability of roofs for PV systems within the city). They engage in data translation to integrate various datasets into GIS for diverse analyses and, to effectively blend this data, they rely on GIS experts. Additionally, they leverage information obtained from past official studies conducted within the city or region.

c. **The bottom-up approach**. They offer a variety of engagement opportunities (including workshops, activities during Energy Week, and activities geared towards the Community Energy sector). Additionally, they assist citizens in applying for solar energy subsidies through the city council, a service that often attracts homeowners interested in renovation projects.

d. **The opportunity**. In their opinion, subsidies, tax incentives, and energy reduction initiatives motivate citizens to embark on renovation projects. To further stimulate the energy renovation sector, they believe that increased efforts are needed in supplier engagement, including training on subsidies application, and navigating city council renovation permits.

**2) DEMAND SIDE FOCUS**

e. **The motivation**. In Sant Cugat, homeowners are driven to undertake renovation by factors such as low maintenance requirements, the positive economic impact, and the enhancement of overall comfort. Like Valencia, their focus is on improving the quality of life while spending less. The message for them should be: "Say goodbye to renovation headaches. Our OSS handles it all -from start to end. Enjoy a hassle-free, cost-effective transformation of your space. Discover the convenience today!". To reach their target audience, they could use various channels including websites, social media apps, local magazines, and radio and TV broadcasts.

f. **The marketing materials**. They have been using flyers and Instagram/Twitter for La Teulada, their solar energy office. They noticed that, if they informed in the street (formal stand giving flyers) they increased visitors to the OSS. They identified six types of customers (cost-conscious / convenience-seeking / quality-driven / sustainability-minded / community-engaged / tech-savvy customers) and their materials and activities were "tailor-made" for each type of them.

g. **The community**. They promoted their services through well-established local channels (flyers, ads in neighbourhood entities, sports venues, schools, and cultural public buildings). Leveraging the power of social media and engaging with users at OLH (Local Home Office). Also, by spotlighting local heroes having successfully implemented community PV systems in multifamily buildings. They have also collaborated with local stakeholders and potential allies to enhance and fine-tune their campaigns for maximum impact. Their partnerships with community energy organizations, city council environmental groups, local businesses, and renewable energy advocates ensured that their initiatives have been tailored to meet specific goals and resonate with the targeted audience.

**3) SUPPLY SIDE FOCUS**

i. **The motivation**. They admitted to needing collaboration from other experts in the city council to achieve this information. They have supramunicipal entities as AMB or DIBA, engaging these areas for all regions. Also a technical office in the property association of Barcelona region. The message for them should be: "Boost your business with our OSS renovation network! Join us to expand your supply capacities and gain exposure to a wide range of renovation projects. Collaborate seamlessly, simplify sales, innovate, and champion sustainability with us. Together, we're reshaping the future of renovation. Embrace the opportunity today".

j. **The networks**. They thought that renovation agents would be very useful for subsidies applications and legal renovation work permits. They listed six measures/actions/services needed: a centralized platform (a digital platform for all renovation stakeholders to coordinate and communicate), standardized processes (industry-wide best practices to streamline operations), certification and training (to ensure quality and consistency), collaborative tools (for real-time tracking and communication), community building (with regular meetings and networking events) and incentives (for active collaboration among stakeholders).

k. **The packs**. Like Valencia, Renoveu scenarios are very useful for them, with different solutions depending on single or multi-family buildings.

**4) StH CUSTOMER JOURNEY**

m. **The services**. They have identified local needs in solar energy systems for domestical uses through the implementation of subsidies (more than 2000 installed systems in 4 years). They have implemented La Teulada energy office to assess about PV systems. Service focused on onboarding and design. Half of the assessments are fiscal (7% e-mail, 7% WhatsApp, 12% phone call and 20% videocall).

n. **The tools**. They listed the existing La Teulada OSS service for PV systems, the on-line tool Renoveu for auto diagnosis in energy efficiency with the link to community energy participation.
o. **The staff.** No training program was defined yet. They said that they could use other programs from AMB or DIBA if needed and that they would ask for a very experienced and technified staff in the OSS service tender.

**5) THE FOLLOW UP**

q. **The sustainability strategy**. They would provide technical, contracting and subsidies advice (A), C), S)).
r. **The business model**. Sant Cugat OSS would be financed on public and NG funds too.
s. **The risk assessment**. They listed the lack of human resources and budget, changes in local government and politicians and the lack of interest from the citizens. They could engage people with local tax reduction if they reduce their energy consumption and being local heroes in town, showing their efforts in their community.
t. **The performance.** To track user interactions with the OSS and cross-reference them with renovation permit demands, they would focus on two key KPIs: the user engagement rate and the permit application correlation. By monitoring them, they expect to gain insights into user behaviour and their impact on renovation projects in the city. They believed that it is essential to track a combination of KPIs to gain a comprehensive view of the OSS performance. Other KPIs, such as project completion rate, cost efficiency, and supplier satisfaction, could also be important for assessing different aspects of success.

For a better interpretation of the above answers, it is convenient to consider the conclusions of the section 6.2.2 - Assessing transferability (particularly those on the degree of difficulty in answering the questions and on the degree of identification of the city).

Although somewhat superficially and terse, it could be deduced from the above content that the Sant Cugat Citizen Hub would result in an OSS financed with public and NG funds, with a focus on multi-family buildings and taking advantage of existing subsidies, tax incentives and grants for energy reduction initiatives as a "hook" for citizens to retrofit their homes. Sant Cugat already has well-established local channels and networks through which they could disseminate tailored StH material and renovation scenarios in Valencia (Renoveu). They would mainly provide technical, contracting and subsidies advice to citizens.

## B. Ljubljana

The answers provided by Ljubljana are included below, also organized by steps and sub-steps.

**1) MARKET SEGMENTATION**

a. **The overall strategy**. Their targeted buildings are one or two family buildings, built after 1964 (seismically safe). Their targeted subjects are working population (retirees do not see the point in renovation).
b. **The top-down approach**. They use RS statistical data and CoL Local energy concept. It is possible for them to do some filtering, and they do manually with the help of excel tables what is not possible.
c. **The bottom-up approach**. They got feedback from the head of the energy advisor office in the city. The type of information they get are the problems when deciding to renovate.
d. **The opportunity**. For them, buildings connected to district heating – lowering the temperature of heating media.

2) **DEMAND SIDE FOCUS**
   e. **The motivation**. The message for them should be: "get a subsidy for renovation and reduce your energy costs". As channel, a massive communication campaign with examples a simulation tool.
   f. **The marketing materials**. The same as Valencia.
   g. **The community**. They promoted their services through the website of Ekofund (https://ekosklad.si/).

3) **SUPPLY SIDE FOCUS**
   k. **The networks**. They mentioned many small contractors and the steps for some sort of qualification/coordination needed.
   **They failed to provide feedback on subs-steps j) The motivations and l) The packs.*

4) **StH CUSTOMER JOURNEY**
   m. **The services**. The same as Valencia.
   n. **The tools**. The digitalisation of the existing energy office.
   o. **The staff**. They stated the staff already have the required education and experience. No training program was defined yet. They said that they could use other programs from AMB or DIBA if needed and that they would ask for a very experienced and technified staff in the OSS service tender.

5) **THE FOLLOW UP**
   q. **The sustainability strategy**. They mentioned a medium-touch OSS providing: A) Technical advice; C) Contracting advice; S) Subsidies They have provided ACS-technical, contracting and subsidies advice.
   r. **The business model**. The stated their OSS would probably be financed from public funds.
   s. **The risk assessment**. They listed the lack of interest, the lack of funding and the lack of trust.
   **They failed to provide feedback on sub-step t) The performance.*

As in the case of Sant Cugat, and for a better interpretation of the answers, it is convenient to consider the conclusions of the section 6.2.2 - Assessing transferability (particularly those on the degree of difficulty in answering the questions and on the degree of identification of the city.

From the above content, it could be briefly and loosely deduced that the Ljubljana Citizen Hub would result in an OSS financed with public funds, focusing on one- or two-family buildings and trying to convince citizens to retrofit their homes by promoting subsidies. Ljubljana would leverage its existing energy office as a channel and provide mainly technical, contracting and subsidies advice to citizens.

## 6.2.2 Assessing transferability

By way of summary and attempting to establish a comparison between the feedback provided by both follower cities, **Sant Cugat** representatives reported a **high degree of usefulness of the test materials provided** for practically all the steps (rating of 4 and 5 except for the marketing material, rated 2), **the same as stated by the city of Ljubljana** (with a rating of 4 and 5 for 14 of the 20 sub-steps). This indicates the **transferability of the materials developed for replication both on a national scale**, within the same country, **and between different countries**.

On the other hand, to consider the feedback received from both cities, it is also interesting to consider the difficulty reported by both cities in finding certain answers. For instance, **Sant Cugat** reported a **high degree of difficulty in answering some questions** (especially on step 1 on **market segmentation** and on the motivations and networks of the **supply side**, and of the **staff** of the OSS). However, **they did not express difficulties in answering the final step of the follow up, contrary to Ljubljana**, who reported **difficulty in answering** not only to step 5 on the **follow-up** (risk assessment and

performance), but also to responding certain questions related to step 3 on the **supply side** (motivations and packs).

Although, in some cases, this could be due to their lack of knowledge about certain aspects, it seems that sometimes it is also due to not having understood the approach of the question, which could be easily solved by providing examples of answers or by referring them to certain more specific instructions within the protocol. It would also be useful to make it clear in the instructions/ protocol for answering that not knowing this information is already an answer that gives important feedback in itself. For example, it is also worth noting that **both cities did not answer the questions related to the strategy** for the demand and supply sides (sub-steps e, i) and for the CJ itself (sub-step m). This could also be interpreted in the above manner.

As for the degree of **identification of both follower cities:**

- **Sant Cugat** they reported a **high degree in almost all sub-steps** (ratings of 4/5 in 13 of the 20 sub-steps) with the exception of the sub-steps of marketing materials, and the motivations and networks of the supply side.
- **Ljubljana**, however, stated that **they did not relate to the experiences in nearly-half of the sub-steps** (for 8 of the 20 sub-steps). However, they declared to feel a **greater degree of identification with Valencia** (in five sub-steps: top-down approach in the market segmentation, motivation and marketing materials of the demand side, services of the CJ and sustainability strategy for the follow-up) **than with Rotterdam** (in only one sub-step, on the networks in the supply side). They did not answer or expressed a very low degree of identification for the rest of the sub-steps. This is also valuable feedback, since it serves to demonstrate that the same replication process does not necessarily have to be more "applicable" between cities in the same country, and also that, not only because they share certain aspects in common (such as climate, similarities in the housing stock, legislative framework, etc.), two cities will need the same OSS model and the services they will need to offer.

In general, **the Valencia pilot experience seems to be of a more "replicable" nature for both follower cities**, with the degree of identification being much higher between Sant Cugat and Valencia (cities in the same country and with more similar contexts).

This information should be considered of great relevance when interpreting the concrete and specific answers for each sub-step provided in the previous section.

**The overall impression of the replication** of both follower cities could be summarized as follows:

- Regarding the replication process, the 5-step structure seems well defined to them, although they also find necessary to translate the steps into local languages and to add political engagement.
- As for the replication materials, they also consider it necessary to translate them. They find useful to include examples related to them as well. Although their specific opinion on each type of material is included in the next section, the main conclusions are that the materials:
  - Are sufficient for replication.
  - Could be difficult to use by other cities who are not familiar with the project, so it would be pertinent to simplify it. In this case, the remarks previously made about giving more precise instructions for cities to respond, or providing examples of answers, make sense again.

Regardless of the cities' opinions, it should be noted that the steps in the replication process are not mandatory for every OSS -the services defined for a new OSS directly depend on the local context, and different OSS can be focused on different services- so there is no need for a city to assess and fill all the materials to open a new OSS.

# 7 Conclusions

As indicated in the Introduction, this deliverable deals with the **one-on-one replication of the Citizen Hub models** developed in the framework of the project **in a double manner**:

- **In the same country**, from one of the pilot cities (Valencia) to one of the follower cities (Sant Cugat del Vallés), located in different regions of the same country (Spain).
- **Between EU countries**, from the two pilot cities (Valencia and Rotterdam) to the City of Ljubljana (Slovenia) as a follower city.

In both ways, after having followed the **Citizen Hub blueprint and implementation script** provided by the pilot cities, the two follower cities have reported their **experiences and opinions on the replication approach process** (mainly, what works and what should further be improved).

Based on the **feedback provided by both follower cities**:

- The **replication process** is **well structured** and has the **potential to be used in whole or in part** depending on the objective pursued (implementation of an OSS offering comprehensive services or only occasional assistance in certain phases, etc.). As a weak point, the **difficulty in completing some of the steps** when intending to follow the whole process.
- The **material** provided for replication is **sufficient and useful**, despite the existence of possible barriers that seem not excessively costly to resolve (such as **language barriers** - it would be necessary to translate the material into local languages; **context specificity** - it would be logical to leave room for the inclusion of context particularities; and **complexity and synthesis** - it would be useful to include brief instructions on the proper way to use the material).

It is also worth noting that, although the "general" reliability of the above feedback could be questioned because of the small **size of the sample** (**two cities**), in this case, rather than being a weakness, it could be considered a **strength**. Indeed, the fact that there were only two cities **made it possible to estimate the degree of knowledge/involvement of the people having participated in the assessment about their context** (and to reflect on the necessary requirements to be an evaluator). In addition, this allowed to know first-hand that the participants involved in both cities had the necessary knowledge and experience to provide a realistic assessment of the performance/validity of the replication process in their specific contexts.

Beyond learning about the replication experience in other contexts with different settings, and testing the validity and effectiveness of the proposed replication process, the steps followed have provided some **highlights** to consider on the approach adopted in the replication process in general and on the materials provided:

- **The adequacy of the dual path adopted to evaluate the replication process**: what would happen between countries with the same language, similar legislative context and similar housing stock? Or between regions of the same country where the building typologies are different?
- **The scope for customization contemplated when developing the implementation material** (especially for the leaflets/brochures with context-specific information).

In this way, the experience obtained with the replication in only two cities has allowed **broadening horizons and radius of scope** on numerous aspects to be considered, which will allow to **enrich the replication process** and expand/improve it in the next replication experiences.

# Annexes

## Annex 1 – Feedback obtained from Sant Cugat del Vallés

- Completed Followers Test
- Completed Citizen Hub blueprint & implementation script

## Annex 2 – Feedback obtained from Ljubljana

- Completed Citizen Hub blueprint & implementation script