



SAVE THE HOMES

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1. Executive Summary

The objective of this report is to establish the Citizen Hub business model for the Valencian and Rotterdam pilot cases. In addition, financial projections and budget estimations are defined and presented as the operational representation of the business model.

The definition of the business model is materialized with the business model canvas tool. This output is a key step in the process to implement an operational Citizen Hub in the pilot cities. Therefore, this report is acknowledged as a key milestone for the SavetheHome Consortium.

The Valencian pilot case main focus are multi-family dwellings and is characterized for having strong support from the public sector at both, City level and Regional level. In fact, the Citizen Hub concept developed for the Valencian case has its foundations in two local initiatives. The first one refers to Valencia's Energy Office, which nowadays serves as an informational point for all citizens willing to obtain advice and to solve inquiries in topics related to energy consumption, energy efficiency and renewable energy. This Energy Office is operative and currently open to the public. Secondly, the Xaloc Network comes to play as a network of offices (i.e. Xarxas) supported by the Regional Government, providing advice and guidance in topics related to housing, urban regeneration, and home renovation.

Further in the Valencia pilot case, there are the recently launched Next Generation EU Funds that exclusively target energy efficiency home renovation. This latest development is incorporated in the business model for the Valencia case, as strong subsidies will be put in place to: (i) trigger the demand, (ii) stimulate market actors, and (iii) implement networks of one-stop-shops across the Region.

Considering the Valencian context, the proposed business model puts special emphasis on the key activities to be performed by the Citizen Hub and those activities in charge of the local Xarxas. The other focal point accrues to the branding of the Hub, as different initiatives at city and regional level may delude the home renovation branding that's needed to create awareness of the project and incentivize home renovation projects.

The Rotterdam pilot case is focused on single-family dwellings and the Citizen Hub model leverages on Alex Energie, which is one of the five existing energy communities in Rotterdam. The definition of Alex Energie as the spearhead of the Hub is particularly interesting, as per definition they already have the needed proximity with homeowners to achieve home renovation projects. Further, the current geographical focus of the Citizen Hub is limited to the Prins Alexander area and the implementation strategy to renovate this area is rather progressive, starting firstly with 16 homes in a specific neighborhood of Prins Alexander, to then tackle the Het Lage Land and Prinsen land neighborhood, and lastly the whole Prins Alexander area.

To successfully deliver an end-to-end home renovation service, the Citizen Hub for the Rotterdam case will leverage on strategic partnerships in the short term. Thus, pinpointing the best fit for these partnerships is a key starting point. Furthermore, another crucial point for the Citizen Hub is the transition from a volunteer basis to a professionalized basis, which is mandatory for the estimated growth of the Hub.

All in all this report showcases the business model canvases for both pilot cases and deliberately provides suggestions and recommendations to implement the Citizen Hubs considering the local context and available resources.



2. Introduction

According to the IPCC, to achieve a 1.5°C consistent pathway, global emissions from the existing building stock must be cut by 80-90% by 2050, compared to 2010 levels. To be in accordance with this pathway, the energy renovation rate in the EU must increase from the present level of 1.2% per annum to a minimum of 3%¹. Yet, there are many supply and demand side barriers preventing building renovation from reaching the necessary scale, especially in the residential sector. Save The Homes aims at solving a number of these barriers by focusing on residential building stock in Valencia and Rotterdam. The project also tackles market fragmentation, lack of affordable financing, and clear customer-centric information.

The current home renovation and corresponding sustainable energy upgrade market is largely fragmented, as it is composed of a myriad of small companies or initiatives which are mostly uncoordinated. This lack of coordination prevents homeowners from getting involved in home retrofitting projects due to a lack of support for obstacles commonly present when undertaking retrofits. In addition, the complexity of the renovation process results in many homeowners abandoning their renovations or limiting projects to the simplest of measures. As such, retrofits are often not carried out to their full energy reducing potential. In the current context, most renovations carried out by home and building owners do not yield optimal energy reductions.

Considering this lack of knowledge and resources, the European Commission advocates for the scaling of energy-efficient home renovations through the establishment of local and regional Integrated Home Renovation Services (IHRS), which will serve to unburden the homeowner's renovation process. IHRS simplify the renovation journey by working as one-stop-shops (OSS) that bring together relevant stakeholders and provide technical assistance, contractor relations and often financial support to facilitate the adoption of works (Milin & Bullier, 2021).

The One-stop-shops model (OSS) is an important tool to scale up energy-efficient home renovations across Europe and a crucial element to achieve the renovation rate targets set by the EU. The OSS model provides all the elements for the successful establishment of local and regional Integrated Home Renovation Services (IHRS). To describe how the services of the OSS will be created, delivered, and captured within the projects, a business model will be employed. For this purpose it was used the Business Model Canvas (BMC) tool, which shows in an easy-to-follow manner the value proposition of the business through a visual display of all business components that must be emplaced to constantly deliver the value proposition to the specific customer segment (Osterwalder & Pigneur, 2010). The BMC will be applied to the Valencian (Spain) and Rotterdam (Netherlands) cases, taking the singularities of each case into account. Nonetheless, it is a functional tool to assert on the value created by the project and delivered to the customers in a well-structured way. The BMC is also proposed as a tool to assess what areas could be improved and thus adapted to market dynamics. As such, the BMC tool is presented as a dynamic tool that needs constant monitoring and reviewing.

This deliverable provides constructive input for the creation of effective Citizen Hubs in the 2 cities to ease the burden of the renovation journey for homeowners. This was done through a benchmarking analysis of active programs currently being undertaken in the European Union. The goal was to identify different strategies to set a self-sustainable model for home energy renovations. To decide each of the two cities' models, these strategies were taken into account and special demands and intrinsic characteristics of each of the two cities were considered to foster the economic viability and success

¹ For further reference and details, refer to: https://ec.europa.eu/commission/presscorner/detail/en/qanda_20_1836



of the proposed models. A self-sustaining business model is fundamental to continue the project beyond the established funding horizon.

3. Methodology

The methodology performed to fulfill this task is mainly composed of two branches. The first one refers to an exhaustive benchmarking analysis of different one-stop-shop models across Europe and the second workstream, accrues to the Business Model Canvas tool. The next paragraphs address these two methods with more detail.

Benchmarking analysis

The purpose of the benchmarking analysis was to better understand how existing one-stop-shops are operating. The benchmarking analysis consists of a concise in-depth review of relevant OSS projects for the Save the Homes project. This deep dive was focused on several country-specific aspects that are relevant for these two countries. This information was gathered through desk research. First of all, the number of operational programs in Europe as of 2021 was determined. This resulted in 64 programs (Annex 1) and they 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: low-touch and high-touch. A low-touch approach is characterized by several entities with low levels of cooperation and provided services. On the other hand, a high-touch approach is a complete home renovation program managed by one entity that provides all the necessary services. This low-touch vs high-touch approach is the difference in terms of engagement and especially key to a successful business model. Figure 3 below shows the difference between these approaches.

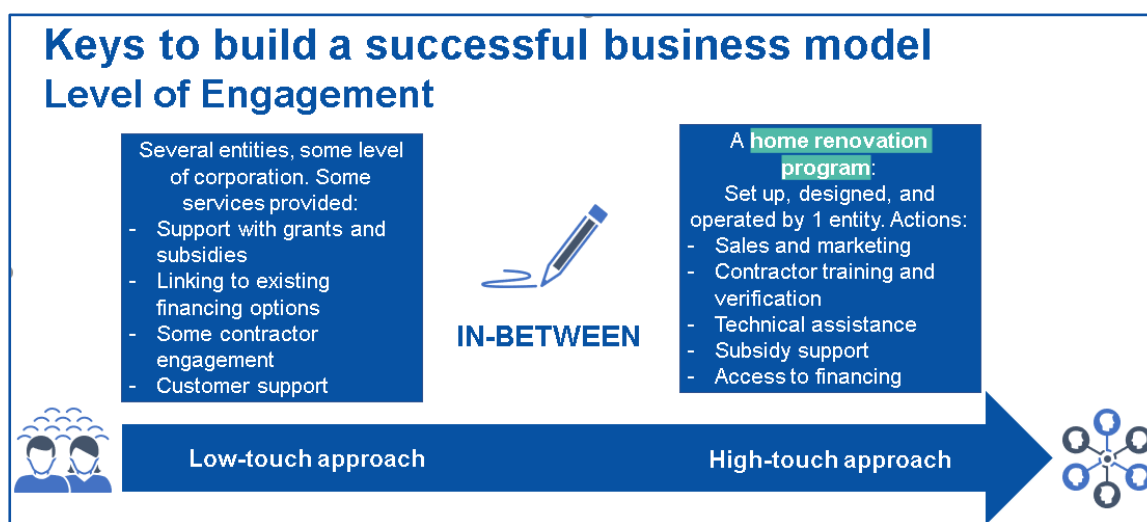


Figure 1 Low-touch Vs High-touch approach

Source: GNE Finance, 2021

After the programs were sorted, in-depth research was executed to retrieve all their information. Existing benchmarking documents served as a base for the research, while interviews were conducted with some of the program managers, when possible, to gain additional information on OSS business models. Each program was then analyzed on a set of criteria including the presence of:



- Technical assistance
- Contractor training and relations
- Subsidy offers or links
- Links to or offers of financing solutions

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:

- **Rating of 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.
- **Rating of 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.
- **Rating of 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.

After the programs were rated, a plot was constructed to visualize the findings. The x-axis represents the intensity of involvement and centralization of services with a rating of 1, 2 or 3. The y-axis represents market traction, which was determined by the number of completed home renovation projects released by the time of this study. All 64 OSS programs were plotted and served as a visual representation to measure the effectiveness of their business models.

In addition, the benchmarking analysis also consists of a concise in-depth review of relevant OSS projects for the Save the Homes project. This deep dive was focused on several country-specific aspects that are relevant for these two countries.

Business model canvas

In order to determine how the One-Stop-Shop (OSS) can be self-sufficient, a specific business model is necessary. This could also be used for analysis, comparison, and assessment of performance with other businesses. One way to build up a business model in an efficient way is by using the Business Model Canvas (BMC) framework. The BMC aims to describe the rationale of how an organization creates, delivers, and captures value (Osterwalder & Pigneur, 2010). 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 analyzed 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*.

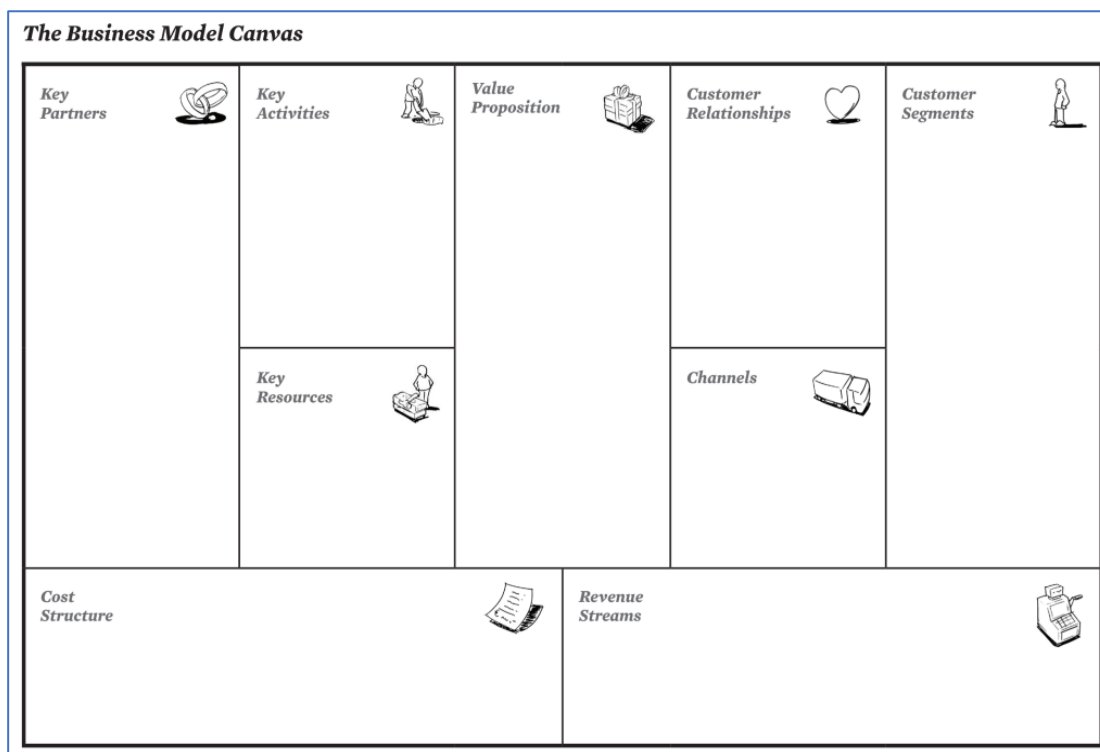


Figure 2 The Business Model Canvas

Source: Osterwalder & Pigneur, 2010

As Figure above shows, the BMC consists of 9 building blocks. Each of these building blocks belong to one of the categories of value explained before. The following paragraph will explain the different building blocks for these different categories.

As already mentioned, the central building block is the *Value Proposition*, which is the main element of the canvas. This section contains the bundle of products and services the organization will create and deliver to the targeted segment of customers. This is the primary source of value that depends on certain gain creators and relievers of pain. This is based on the current gains and pains of the targeted customer segment. The Value Proposition Canvas is a small tool that could be used to carry out this analysis and create a value proposition as a result (Osterwalder & Pigneur, 2010). This canvas is shown in Figure below.



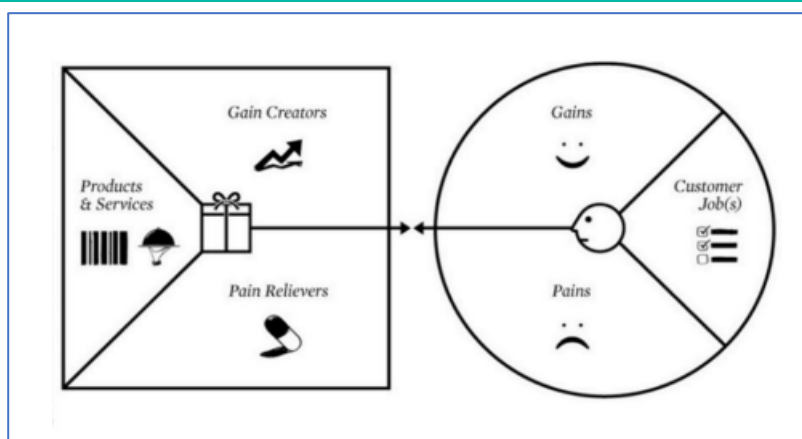


Figure 3 The Value Proposition Canvas

Osterwalder & Pigneur, 2010

Value creation

Three building blocks belong to the creation of value in the business model. These are the following:

Key Resources

The key resources building block describes the most important assets and resources that are required to make a business model work. Eventually, these resources and assets allow the organization to create the value proposition. The nature of the resources could be physical, financial, human, or intellectual and owned, leased or acquired from key partners. The type of the business model is also important for the specific nature and focus of the key resources. A manufacturer of cars needs physical resources, whereas a software designer company focuses more on human and intellectual resources.

Key Activities

The following building block that belongs to value creation is *Key Activities*. This describes the most important things a company must do to make its business model work. These activities make sure that your product is of superior quality and has substantial quantities. The key activities can be classified into three categories, which are: product, problem solving, platform/network. Product activities focus on designing and delivering a real product. The problem-solving activities mainly describe new solutions that are necessary for the customer problems. This category is therefore relevant for organizations like hospitals, consultancies and OSS. Key activities for the platform or network category is relevant when a platform is also a key resource for the business model. As it may be noticed, these categories may differ in terms of relevance for the business models in the different sectors.

Key Partners

This building block is the final section responsible for the creation of value. *Key Partners* describes the network of suppliers and partners that make the business model work. Partnerships could be relevant for an organization, as they reduce risk and can provide additional resources. These four different types of partnerships are distinguished (Osterwalder & Pigneur, 2010):

1. Strategic alliances between non-competitors

This partnership is between two organizations that operate in two different industries and therefore have no competition. This alliance benefits both organizations in different ways.



2. Coopetition

Different from the first partnership type, coopetition is a partnership with two competitors. This partnership aims to generate awareness for their industry and to gain new users.

3. Joint ventures

A joint venture is when two organizations partner together and create a whole new entity. This is done with the goal to generate more profit for both parties.

4. Buyer-supplier relationships

As the name of this partnership type suggests, this partnership is between a buyer and supplier. This means that the elements of trust, quality and commitment are really incorporated between these two entities.

Value delivery

Customer Segments

The first building block of value delivery is *Customer Segments*. This defines the different groups of people or organizations the project aims to reach and serve. To better satisfy customers, an organization may group them into several segments with common needs and attributes. Once this definition is done, a conscious decision is made about which segments to choose and serve and which to ignore. After this a business model could be designed for these segments that are also strongly understood. Two aspects are relevant for the determination of the segments, which are the type of segment and the demographics. The segment type is about the type of market that is targeted, which could be mass, niche, segmented, or diversified. Demographics describe general aspects such as age, gender, and income level.

Customer Relationships

Related to the previously discussed building block, *Customer Relationships* describes the types of relationships the project will establish with specific *Customer Segments*. This building block needs to think about what relationships are expected by customers, how costly the relationships are, and how well they are integrated with the business model. Six categories of customer relationships are distinguished (Osterwalder & Pigneur, 2010):

1. Personal Assistance

This relationship is focused on human communication. This could be realized in multiple ways, such as by phone, email, or face-to-face.

2. Dedicated Personal Assistance

Compared to the first category, this relationship is much more individually tailored. One employee is responsible for a specific customer, which means that they are communicating with the same person. This provides trust, familiarity, and eventually builds meaningful long-term relationships with customers.

3. Self-Service

As the name suggests, this relationship has no direct relationship between an organisation and their clients. This is used when there is no need for human interaction, mainly because the customers are self-sufficient.

4. Automated Services



This relationship type combines Self-Service with automated processes, with the goal of identifying the needs of customers or identifying new customers. Moreover, automated services could establish personal relationships and better customer service.

5. Communities

Communities is a relationship type that focuses on using communities to connect customers with the organization, but also with each other. This will enable customers to get to know each other better and even solve problems. The organization will also get a better understanding of their customer base.

6. Co-Creation

This relationship is taking the business-customer relationship to another level. Co-Creation is a mutually beneficial relationship where organizations for example ask their customers to help them with a product or service design.

Channels

This building block describes how an organization communicates with its customers and reaches its *Customer Segments* to deliver their *Value Proposition*. These touch points are important for the customer experience. Additionally, the types of channel phases are relevant to determine which channel to use. Channels can cover some or all of these phases and be owned or partnered. Five types of phases are distinguished (Osterwalder & Pigneur, 2010):

1. Awareness

How do we make customers aware of your products and services?

2. Evaluation

How do we help customers evaluate your *Value Proposition*?

3. Purchase

How do we enable customers to purchase our specific products and services?

4. Delivery

How do we deliver our *Value Proposition* to customers?

5. After Sales

How do we provide additional support to customers after they purchase your products or services?

Value capture

Revenue Streams

The value is captured in the building block of *Revenue Streams*. This building block represents the cash the organization generates from each *Customer Segment*. Revenue generation is not only about the price of the product. Other aspects are also relevant, such as the value the customers are willing to pay for the product, how they pay for the product or service, and what type of product or service the organization is selling. Different ways of generating revenue streams could be asset sales, usage fees, subscription fees, renting/leasing, or licensing.



Cost Structure

The last building block is *cost structure*. This describes all the costs and expenses incurred to operate the business model of the organization. Traditionally, these costs should be minimized in every organization. However, low cost structures are more important for some organizations than others. This means a distinction between two classes of costs are made:

1. Cost-driven cost structures

These structures focus on minimizing the costs of the products and services as much as possible.

2. Value-driven cost structures

These structures focus more on value creation and are less concerned about the cost implications of their business model. A high degree of personalized service is an example of this.

In addition to the conventional Business Model Canvas, two extra building blocks are added to the canvas to include non-economic benefits and costs. These two buildings blocks are the following:

Societal Revenue

This building block describes the social, environmental and governance benefits of implementing the business model. This is especially relevant for the business model of this project, as it aims to increase energy savings and provide additional social benefits to the participants. Including this building block will enable the organization to write down and think about all the additional benefits the business model could provide.

Societal Costs

The second building block that is added is *Societal Costs*. This describes the social, environmental and governance costs incurred in the business model. Thinking about these costs will force organizations to deal with them as much as possible to limit its potential damage on society. As a result, the *Societal Revenues* will be much larger than the *Societal Costs* and relevant societal impact is achieved.

Based on the methodology of the BMC previously explained, the cities involved in the project constructed their OSS business model in a complete manner. As a result, an economically self-sustainable business model for the Citizen hub concept was developed and adapted for the local circumstances of each pilot. Special attention was placed on potential revenue streams to make the Citizen Hub model economically viable. In this sense, a budget and financial projections for 3 years were structured to establish sales goals to reach break-even as soon as possible.

Likewise, to generate those sales, there was a strong focus on a) defining a customer-centric value proposition that addresses the needs of homeowners along the renovation process, as well as b) communicating effectively to homeowners to generate strong market traction. Social, economic, and environmental impact will be considered in the design of the business model, especially in the two added building blocks of Social Revenue and Social Costs. Thorough consideration about all the building blocks will result in value creation, delivery and capture as a result of this project.

The pilots collaborated with GNE by providing the necessary inputs and their feedback throughout the process and in the end, validated the models. Collaboration was seen in several working sessions to construct both business models and this collaboration will continue during the project to ensure the business model is adapted as many times as needed to guarantee its success. These meetings were and will be very important in discussing and fine-tuning the content of the canvasses. Deployment of different approaches were suggested and decided upon, which is important for the actual realization of the project and the validation of them.



Joint working sessions between Rotterdam and Valencia were put in place as well. This was especially relevant and useful in the case of Rotterdam since they joined the project in a later stage. Valencia was able to share with Rotterdam their experience and give them valuable insights that were key to help them navigate their process. The image below shows one of these working sessions that were held with both partners from Rotterdam and Valencia.

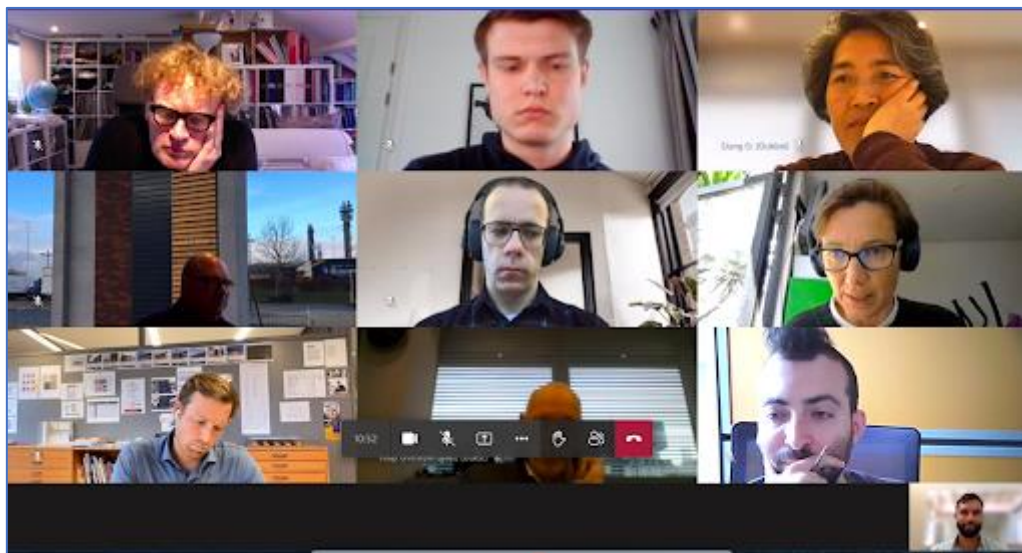


Figure 4 Joint Working Session VLC & RTDM Partners

Source: GNE Finance, 2022

With the construction of the business model, aspects such as regulatory, societal, cultural, socioeconomic, and technological trends were taken into consideration. Industry, macro-economic and market forces were also an integral part of the business model creation process. Furthermore, data and insights from the benchmarking process were taken into consideration to be able to create a relevant business model canvas.

Additionally, other successful OSS-based home renovation programs were consulted to ensure that working best practices are considered. This will be discussed in the next chapter. Moreover, business model projections and budget needs will be analyzed for both pilot cases.



4. Benchmarking of existing business models

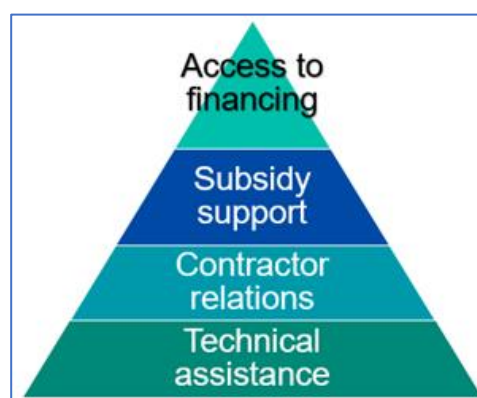
Multiple pilots have been developed in the last 10 years which serve as concrete examples to guide the development of future projects. However, many of these emerging initiatives fall off due to the ending of funding, the lack of self-financing and/or the lack of the project's success mainly attributed to a low number of engagements. Through a benchmarking analysis of active programs within the EU, the aim is to gain an overall understanding of best practices and use this knowledge to inform our decisions for the creation of effective citizen hubs in Valencia and Rotterdam. In addition, a deeper dive into one-stop-shops (OSS) programs relevant to the pilots in Valencia and Rotterdam was taken. This analysis gave more attention to country-specific advantages. The following chapter will discuss the benchmarking analysis and this deep-dive into the relevant OSS. The results will be used as the foundation layer and provides guidance for the creation of the business models in the next chapter.

Results of benchmarking analysis

Overall, the 64 programs had mixed legal statuses that were determined by their geographical area and degree of public and private involvement, as can be seen in Annex 1. Among these cases, it is apparent that the public sector has an active role in the development and success of an OSS (mostly via public-private partnerships or public authority support for private companies). Many of the featured programs have been developed under the auspices of EU projects, leading them to receive funding from the European Union. In order to fall in line with funding guidelines, these programs were set up to be self-sustaining or replicable, the success of which depended on their innovative business models as well as relations established at local and national levels. Although the market is fragmented, it was observed that energy renovation programs tend to cater to residential buildings, with a particularly strong focus on single-family housing (70%), followed by multi-family dwellings (40%), or a combination of the two.

Most initiatives assessed within this study provide technical renovation advice and support to their citizens, however, they do not always provide contractor relations, subsidies, and financing. This is an element of differentiation and potentially represents a competitive advantage for certain programs. Generally, most successful OSS-based home renovation programs included the following characteristics:

- Technical advice and customer-centric service.
- Contractor recommendations which have been generated through a vetting or training process.
- Financing solutions in the form of bank loans or public loans, tax credits and deductions, as well as connections to grants and subsidies.
- Some degree of governmental funding.



Moreover, Figure below shows the constructed figure where all 64 OSS programs are plotted. This figure demonstrates that almost all programs have a rating of 2 or 3, but truly integrated OSS with rating 3 have higher market traction and therefore yield the highest number of renovations. This will eventually lead to the highest energy savings.



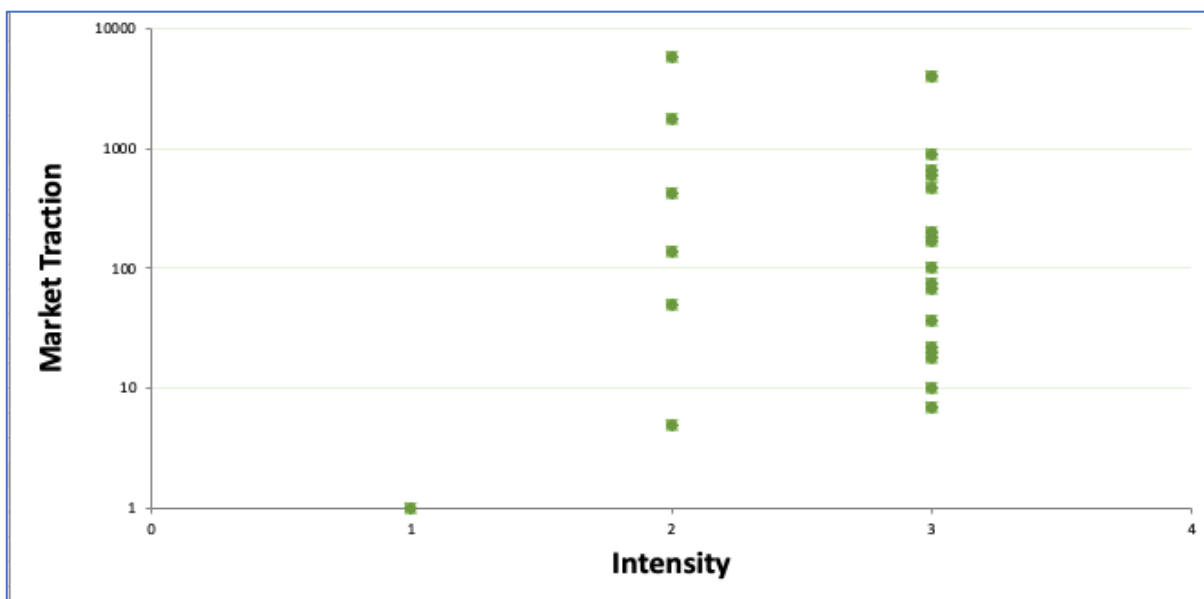


Figure 5 Logarithmic graph of OSS-based home renovation programs in term of intensity and market traction

Source: GNE Finance, 2021

It can thus be concluded that one-stop-shop programs providing home renovation services including technical advice and support, contractor relations, subsidies and financing stand out from the crowd. These programs offering integrated services have a strong element of differentiation and have a competitive advantage as most of these programs yield the largest numbers of completed projects.

In-depth analysis of best practices

This section provides a concise in-depth analysis of relevant OSS business models for the pilots of Valencia and Rotterdam. Special attention was given to legal, practical and administrative advantages that are country specific. This will help to suggest market-tested business models for the OSS of Save the Homes. Figure below shows the characteristics of the business models that are relevant to the pilots of this project in a table.



	SPEE/ Hautes de France Energies	Sharing Cities – Milan	HolaDomus – Catalonia	Opengela – Basque Country	De Woonpas/ FITHOME - NL	OPERENE
Type	Public authority	Public authority	Private Foundation	Public-Private partnership	Private company	Private company
Services	Technical assistance	Technical advice Co-design	Technical assistance, contractor training	Technical assistance, contractor training	One simple technical solution	Technical support
Contractor relations	Training, verification	no	Training, verification	Training, verification	Contractors pre-selected	Contractors pre-selected
Subsidies	Yes, support		Yes – full integration	Yes – full integration	No	No
Financing	Yes, loans	Ecobonus integration and bank financing	Yes	Yes, plus loans	Yes, home-based	Connect customers with eco-pre (interest free loan)

Figure 6 Characteristics of the six relevant OSS business models

Source: GNE Finance, 2021

As a result of this analysis and comparing programs from Spain and the Netherlands with other countries, it demonstrates that Spain and the Netherlands offer great opportunities for IHRS since the current legal and fiscal frameworks support sustainable retrofitting, enabling the provision of home-based financing to homeowners. This is an essential aspect in the development and deployment of OSS programs, as it is a crucial element needed to facilitate innovative financing solutions to homeowners that need small scale loans for home retrofits. For instance, the FITHOME initiative, in the Netherlands, is a great example of a home renovation program, which took advantage of the national framework to leverage and deploy an innovative financial approach (“betterment tax”) to provide accessible and low-risk financing.

While drawing inspiration from these successful programs is important, it is essential to keep in mind that future OSS will have to adapt to the local environments to which they cater, as programs will be greatly influenced by needs and limitations of the area in which they are found. For instance, legal and regulatory frameworks must be considered while deploying programs, as this will define the programs’ status and the tools they will be allowed to use.

Finally, it is crucial to build a self-sustaining business model that can be prosperous in case of lack of funding or at the end of a funding. In addition, a strong level of engagement with all market actors will be needed. This is also shown by the benchmarking analysis of the 64 OSS programs in the European Union. If these two elements are not integrated, the one-stop-shop will struggle to achieve its initial objective and will likely have limited reach and success.



5. Business Model Design

Following the BMC methodology previously described a business model for both Valencia and Rotterdam's OSS were built on the project. The main purpose of these business model is to guarantee the OSS will be able to effectively create value to its customers and that they will be economically self-sufficient after the SavetheHomes project is done. Below both business models are described in depth.

Valencia Case

The strategy to define Valencia's BMC was two- folded. The first part of the strategy aimed to ensure Valencia partners fully understood the fundamental principles of the BMC. This level of knowledge was achieved by guiding Valencia through each section of the model on an individual basis to then, taking a step back, understand how the model works by the interconnection of all parts of the canvas.

The second stream of the strategy refers to working sessions. Four different types of working methodologies were performed to fulfill the task. These were: (i) online joint work between all parties involved in the task. One of the key milestones on this work style was the benchmarking presentation during the Technical Workshop held on June 2021²; (ii) offline individual work, meaning that Valencia partners and also the Consultant Team iterated the model on an individual basis; (iii) in-person session that was performed during the Consortium Meeting held in Valencia, September 2021; and (iv) validation process, where Valencia partners confirmed that the last version of the BMC is ready and of conformity of all relevant parties.

All in all, around 8 different working sessions were held to fulfill this task. The following paragraphs will present the results for Valencia's case.

Valencia Citizen Hub Business Model Canvas

The definition of the BMC for the case of Valencia, came amidst the proclaimed roll out of the Next Generation EU Funds by the European Commission. In brief, these funds constitute a temporary instrument with the aim of promoting and leading the recovery post Covid-19, being the largest stimulus package in the EU with a total of 1.8 billion euros to rebuild the 'European Future Generation'.

The Next Generation EU Funds is a program endowed with 750,000 million euros whose objective is to help repair the social and economic damage caused by Covid-19, of which a total of 140,000 million euros have been transferred to Spain (72,700 million euros in subsidies and transfers, and 67,300 million Euros in loans) equivalent to 11% of the national GDP. Figure to the right better showcases this breakdown.



These resources have allowed Spain to mobilize a volume of funds to reinforce both public and private investment in the face of post-Covid recovery and, in addition, reorient the productive model, promoting the green transition, decarbonization, energy efficiency, renewable energy and other measures linked to the circular economy, specifically designing a specific plan focused on promoting

² The content presented during this Technical Workshop is showcased in the prior Chapter, and also in the Annex.



actions for the rehabilitation and improvement of the building stock, with special attention to the most vulnerable neighborhoods.

To deploy these funds at national level, the 'Recovery, Transformation and Resilience Plan' has been created, which channels the European Reconstruction Funds to promote the objectives of the Next Generation EU. Component 2 of the aforementioned Plan is focused on the reactivation of the construction and real estate sector. This deserves special mention.

The objective of the Component 2 is to activate urban regeneration, in line with the so-called 'Renovation Wave', promoting job creation and neighborhood activity in the short term, seeking to guarantee a rate of sustainable rehabilitation of the housing in the medium and long term.

To meet these objectives, Royal Decree 853 of 2021, which is the legal instrument that articulates the administrative framework to promote Component 2, establishes the following programs:

1. Aid program for rehabilitation actions at the neighborhood level (i.e. barrios);
2. Support program for rehabilitation offices (i.e. one-stop-shops or alike);
3. Aid program for rehabilitation actions at the building level;
4. Aid program for energy efficiency actions in homes;
5. Aid program for the preparation of the book of the existing building for the rehabilitation and the drafting of rehabilitation projects; and
6. Aid program for the construction of social rental housing in energy efficient buildings.

In terms of allocation of resources, the Royal Decree designates a total of 124.550 million euros of funds in favor of the Valencian Region, aimed at stimulating home renovations at large scale, activating the local economy, and thus promoting social recovery within the region. In respect of specific targets, it's expected that these funds are deployed to renovate 17.314 dwellings in the Valencian Region. Figure below better showcases the breakdown at national level.

Comunidad Autónoma/Ciudad	Porcentaje	Miles de euros	N.º de actuaciones (viviendas únicas)
Andalucía.	17,370	199.928,70	27.792
Aragón.	2,897	33.344,47	4.635
Asturias.	2,429	27.957,79	3.886
Baleares.	2,461	28.326,11	3.938
Canarias.	4,591	52.842,41	7.346
Cantabria.	1,296	14.916,96	2.074
Castilla y León.	5,441	62.625,91	8.706
Castilla-La Mancha.	4,212	48.480,12	6.739
Cataluña.	16,163	186.036,13	25.861
Comunidad Valenciana.	10,821	124.549,71	17.314
Extremadura.	2,305	26.530,55	3.688
Galicia.	5,845	67.275,95	9.352
Madrid.	14,007	161.220,57	22.411
Murcia.	2,939	33.827,89	4.702
Navarra.	1,380	15.883,80	2.208
País Vasco.	4,858	55.915,58	7.773
Rioja.	0,698	8.033,98	1.117
Ceuta.	0,146	1.680,46	233
Melilla.	0,141	1.622,91	225
Total España.	100,000	1.151.000,00	160.000

Figure 7 Next Generation EU Funds National-level Breakdown

Source: BOE, 2021 ([see here](#))



The relevance of these funds is enormous and the Consortium acknowledges that these resources represents an opportunity -without precedence- to trigger demand for home energy renovations. Considering that one of the consortium partners represents the regional government, i.e. Generalitat Valenciana, and another partners represents the local Government as it works closely with the City Council, i.e. Fundació Valencia Clima I Energía, strong efforts took place in order to leverage on the latest market intelligence and development to design a model as updated as possible.

Under this context, the next paragraphs will describe in detail each component of the Business Model to then, in the following subchapter, provide an in-depth analysis of the model with recommendations for an effective rollout of the model in the short, medium, and long-term. Figure below showcases the Business Model Canvas for the Valencian Citizen Hub concept.

The full Business Model Canvas for the Valencian case is presented in Annex 2.

Customer Segmentation

The model starts with the specific segment of the Valencian population that the Citizen Hub will address. In other words, the customer segmentation section identifies the specific group that the model will serve and deliver its services to. As shown in Figure above, three customer segments were defined.

The primary focus of the service will be the community of owners that dwell in multifamily buildings. As Deliverable 2.6 presented, 75% of the total building stock of Valencia are multifamily buildings and therefore this specific group deserves special attention. Ought to remark that retrofitting a multifamily building is far more complex than retrofitting a single house or apartment, as the decision-making process of multifamily buildings requires the involvement of most of the dwellers. In fact, to approve the renovation process a simple majority of votes must be reached (i.e. the half plus one vote). However, the economic and environmental impact of pursuing this type of projects is far greater than renovating a single home. Further, the word-of-mouth impact of achieving the first multifamily building renovation is larger than a single unit.

The secondary focus is the single-family homeowners of Valencia. Considering that the rest of the building stock is composed of this type of infrastructure, it's plausible to include this segment as part of the scope of the services of the Citizen Hub. However, as the time-cost-impact relation of addressing this segment is weaker than the prior segment, it's expected that reaching out to single-family homeowners would be a natural result of the efforts dedicated to involve the community of homeowners.

Last but not least, property managers (i.e. *administradores de fincas*) come into play. In fact, property managers in most cases are the ones that have direct communication with the communities of owners. Furthermore, some property managers manage more than one multifamily building, so it's plausible to consider this segment as relevant for the purpose of service delivery and direct communication with the users of the Citizen Hub.

Value Proposition

Given the fact that the energy renovation ecosystem -in any context- typically involves a large number of actors, it's reasonable to have more than one value proposition. For our case of study, two value propositions have been defined.



First the value proposition for homeowners of Valencia. In brief, the Citizen Hub will deliver access, in a frictionless and smooth manner, to an energy efficient, accessible, and comfortable home. This value proposition can be considered the backbone of the home renovation services provided by the Citizen Hub. Further, the large-scale rollout of this value proposition also encompasses wider benefits for the citizens as well as all market players. For instance, lower energy bills will bring higher disposable income for local families, which may be reflected in either higher monetary savings rates or higher expenditures in leisure activities or to cover other needs, therefore positively impacting the local economy.

Secondly, there is the value proposition for those actors that have a role to play along the home renovation customer journey. In detail, we allude to contractors, professionals, and financing entities. In brief, these actors will experience an increase in their project pipeline, as homeowners will demand their services through the Citizen Hub.

Channels

Once the different types of customers are defined and the value proposition to each customer has been established, the next step consists of narrowing down the channels that will enable the service delivery and that boosts market traction.

The Valencian Model has defined two major streams for this section, which are classified as offline and online channels. The offline channels refer to all activities and physical infrastructure that work as a means of delivering the value proposition and information related to the services that the Citizen Hub provides. For instance, the Energy Office front-desk is the most important channel up to date, as it already serves as an informational point where the citizens can approach and solve their inquiries. In fact, the existing office serves as a venue for workshops and dedicated discussions on the topic of energy efficiency, renewable energy and energy communities, amongst others.

Concerning the marketing aspect of the offline channels, it's ought to remark that the use of leaflets, posters, bus stop ads and information points on other public premises, such as municipal markets, is key and will be used to greater the impact of the Citizen Hub. Furthermore, the definition of SaveTheHomes Ambassadors (i.e. local heroes) is a good practice that will provide direct communication with homeowners and therefore boost the capacity of the word-of-mouth impact.

In relation to the online channels, these account the typical set of options that are available nowadays, such as social media, newsletters, webinars, workshops, online events and google ads and paid promotion. These are extremely necessary considering the digital impact that a good online marketing campaign may have, especially when it's supported by the local and regional government. In fact, it's expected to also leverage on the regional initiative related to housing, which is the Xaloc Network.

In brief, the Xaloc Network is put in place by the Regional Government to offer a comprehensive service of management, guidance, information, social mediation and advice on housing, building rehabilitation and urban regeneration for the citizens of the Region. This initiative started in parallel with the SaveTheHomes Project and its objective is to open 62 offices this decade.

Customer Relations

Considering that renovation works often take more than six months, it's crucial to deliver a service as tailored as possible to make the renovation journey as smooth as possible. To achieve this, it's crucial to establish a long-term, reliable and dedicated personal relation with the customer.



Moreover, the Valencian Citizen Hub Concept will leverage on the option of co-designing projects with the customer, always providing support whenever needed, regardless of the inquiry or stage in the customer journey process.

All in all, the Valencian Citizen Hub will be a place where homeowners will be listened to, attended and where they can rely on. In order to achieve this, it's imperative to develop a fluent and active relation with the customer, either online and offline through an automated service through the Citizen Hub website.

Revenue Streams

In order to design a well-functioning and long-lasting Citizen Hub, it's imperative to define the set of possible revenue streams. As the model shows, all the expected revenue streams come from a public source and these can be at local, regional, and European level. This showcases that, at least in the short term, there's no expected source of private funding nor having premium services that entails a fee.

The crucial point with public funding is that it is fixed in the sense of timing and amount of funding. Therefore, this type of funding rarely reacts to market dynamics and business traction, which may become an obstacle if the impact of the Citizen Hub is greater than its actual capacity of responding citizens' requests.

Amidst this challenge, there's one specific source of public funding that may bring light to the critical point. This is the Regional funding under the Programs of the Real Decreto, as the model shows. This funding alternative was presented in the previous section and will be further analyzed in the conclusion section.

Key Activities

To succeed in the delivery of the value proposition to the local community of owners, the Citizen Hub must perform specific key activities that overall enables a smooth functioning of the model.

The first and most important key activity relies on the onboarding process of the Citizen Hub's personnel. In practice, the personnel will interact on a daily basis with the citizens and therefore it's crucial to (i) select the best possible personnel, (ii) train them according to their role and responsibilities, and (iii) equip them with the necessary tools and skills to enable best possible performance.

Other key activities, as mapped in Figure above, refer to the specific services that the Citizen Hub will offer to the citizens but also the key activities that will enable a smooth back-office service. For instance: contractors' validation process, customer journey development and monitoring, service delivery workflows, and data gathering and analysis, can be classified as key activities that will impact the back-office of the Citizen Hub. Whilst for the case of the technical and economic pre-diagnosis of projects and renovation measures, partnerships development, mediation between users and contractors, and post renovation follow-up can be defined as service-related activities as these are performed with the client at sight.

Key Resources

Key resources go hand by hand with the key activities mapped in the previous paragraph. For the case of the Valencian Citizen Hub, there are three major branches of the key resources.



The first branch refers to the personnel, physical office, partners and branding. All in all these resources strengthen the positioning and recognition of the Citizen Hub amongst the citizens as well as key actors such as contractors and property managers.

The second branch accrues to the tools that support the personnel and enables them to perform and deliver the service to the citizens in a fluent and reliable way. Some of these resources are the customer service protocol, energy efficiency guides such as Q&As and forms, between others. These technical and financial calculation tools are all an indispensable resource that will enable the Citizen Hub to support the decision-making process of homeowners with proper data, based on the service manual and phone assistance guidelines.

The third and last branch refers to the resources that homeowners can use, either offline or online, and that provides them additional information to support their decision-making process as well. One of the most relevant resources for homeowners are the brochures and informational leaflets for public funding aids and subsidies. These tools are expected to be user friendly, jargon-free and always available to homeowners.

Key Partners

The key partners defined in the model provide a good overview of the actors involved in the home renovation process for the Valencia case. First, we have the public actors, which are local and regional partners, such as Fundació Valencia Clima i Energia (VCE), Instituto Valenciano de la Edificación (IVE) and the Consejo General de Colegios de Administradores de Fincas Comunitat Valenciana (VRCP). These three actors are members of the SaveTheHomes Consortium and are well positioned to boost and replicate the services across the region.

Following the same rationale, other key partners are the contractors, property managers, professionals and local associations that play a crucial and essential role along the customer journey. In fact, it's expected that these players display a proactive role as they are considered to be key partners since the success of the service delivery depends to a certain degree on their performance. This is understood as a win-win relationship and therefore it's expected to be beneficial and smoothly enacted.

Last but not least, financial institutions come into the renovation ecosystem as they are positioned to provide financing solutions to homeowners who are willing to finance, with the best possible financing conditions (i.e. interest rates and tenor), their renovation project. In fact, strong efforts were put together with Valencian partners to generate strong relationships with the local financing institutions³ as they are considered a key partner to make the renovation works a reality for the citizens.

Cost Structure

The cost structure of the model can be divided into two types. The first type alludes to fixed costs, such as personnel, office utilities and ICT tools. The second type refers to the variable costs, which are dependent on the market dynamics and market response to the service delivery. These are the marketing and communication efforts and travels and outside events.

³ The efforts performed on this topic were presented in Deliverable 2.6 and will be updated as part of Deliverable 3.4. This last report will showcase the financing available alternatives for the citizen of both pilot cases.



The cost structure defined in Figure above is rather common for most One Stop Shops Business Models across Spain and Europe. However, one point that deserves special attention are the personnel costs, as these may increase in the case that the market demand and requirements surpass the capacity of the Citizen Hub. Although this can be referred to as a “happy problem”, it’s worth paying special attention to the increase in demand. Furthermore, it’s well acknowledged that the typical public procedure to hire personnel is rather complex and time consuming, which may become an obstacle for the Citizen Hub operation if demand grows exponentially.

Societal Cost and Societal Revenue

This section showcases what are the societal costs of not delivering the value proposition accordingly. In other words, the societal cost of the BMC are the negative effects of not succeeding in the quest of providing frictionless access to an energy efficient, accessible and comfortable home to the homeowners of Valencia.

These costs encompass economic, environmental, and of course social aspects such as energy poverty, energy costs, social exclusion, lack of specialized workforce and unemployment.

On the contrary, if the model described in Figure above succeeds and delivers the value proposition to homeowners, triggers market demand, and entices contractors to perform the works and financing institutions to deploy their products, the societal revenue occurs.

These positive impacts (i.e. societal revenue) can be also referred to as social, environmental and economic impact. The described impact dimension can be summarized as an overall improvement on the quality of life, strong stimulus to the economy, social cohesion, and lower greenhouse gas emissions.

The BMC for the Valencian Citizen Hub is presented as a dynamic tool that has to be constantly reviewed in order to find room for improvements in the service delivery. As such, it is expected that the model is adapted to the upcoming influence of the rollout of the Real Decreto and its Program’s, as well as the impact on the market.

The following conclusions and recommendation section will expose the focal points of Valencia’s Citizen Hub Business Model, to then propose recommendations for the short, medium and long term horizon.

Conclusions and Recommendation for Valencia’s BMC

The recommendations provided to the Valencia Pilot case are based on specific key points from the BMC presented in the previous section. With the objective of providing a clear action plan, the recommendations are provided in relation to their relevance in time. As a result, three-time horizon are established: short term (2022 to mid 2023), medium term (2023 to 2025), and long term (2025+).

HORIZON	FOCAL POINTS	RECOMMENDATION
SHORT TERM	Personnel – onboarding and training process	The personnel of the OSS represent the most valuable resource to help homeowners navigate through the renovation process. To successfully support homeowners, the personnel have to be well trained and most importantly,



		<p>aware of the service delivery workflows of each part of the customer journey.</p> <p>To guarantee the best possible service delivery, it's suggested to elaborate a detailed onboarding process to the personnel. The recommended onboarding process is composed of three major levels: (i) administrative and legal, (ii) soft skills, and (iii) OSS operative, workflows and support tools. Last, it's suggested that at the end of each training, a brief test or demo is performed by the personnel to certify the appropriate understanding of the content. In-person training is preferred over online training.</p>
<p>SHORT TERM</p>	<p>Role of Property Managers in the home renovation ecosystem</p>	<p>Dealing with the community of owners can be very complex and, in most cases, time consuming. The decision-making process of these groups is burdensome, and a simple majority of votes is needed to approve the execution of the renovation project.</p> <p>Under this context, Property Managers emerge as a crucial ally and can play a role on the following three points:</p> <ul style="list-style-type: none"> ● Link to homeowners: Property Managers are in direct contact with homeowners and thus they can disseminate the benefits of home renovation to their clients, triggering interest and requesting more information. When this is achieved, the personnel of the citizen hub can direct in-person and meet the community of homeowners and progress along the home renovation journey. ● Ease the decision-making process: it may occur that the simple majority of votes is not achieved, and more votes are needed to approve the project. In this case, Property Managers may work hand by hand with the personnel of the citizen hub to identify the specific reasons of why the project is not being approved and most importantly, pinpoint those homeowners with the highest probability of changing their vote to a favorable result to the renovation project. ● Monitoring of works: in most cases, Property Managers attend in-person to the building itself. If a renovation work is in process, Property Managers may support the monitoring process of the project and report directly to the OSS personnel and react if needed. <p>In order to materialize these synergies, the added value for Property Managers must be evident and perceived by these actors. It's suggested that the personnel of the OSS reinforce and narrate the idea that Property Managers are improving their value proposition to their clients and thus are differentiating with competition.</p>



<p>SHORT TERM</p>	<p>OSS Branding</p>	<p>There are several initiatives related to home renovation, energy, and housing topics in the Valencia Region. Although this is quite a remarkable achievement, it has a specific downside: lack of brand identity.</p> <p>Considering that trust is crucial to achieve the renovation projects, it's strongly suggested to select one specific brand -or name- to all topics related to home renovation. This brand (and therefore logo) must be local and evoke trust amongst the citizens.</p> <p>It's suggested to leverage as much as possible with the Regional initiative of the Xaloc Network (i.e. Xarxas) as an umbrella organization. For instance: Xarxa Russafa and Xarxa Sant Antoni. Evidently, Xarxa relates with the Regional initiative whilst Russafa, in this case, relates to that specific neighborhood.</p> <p>For the case of the Energy Office brand, it's suggested to adopt either a neighborhood-level identity or to provide specific technical assistance to the yet to be implemented neighborhood Xarxas.</p>
<p>SHORT TERM</p>	<p>Royal Decree</p>	<p>The rollout of the Next Generation Funds is by far the most important milestone in the home renovation market in Spain. As of today, there's little clarity and certainty about the operative mechanics on how to obtain these subsidies and the actors that will enjoy these aids.</p> <p>Several conversations with Valencian partners, and desk research and expert consultation, have concluded that once the Regional Government announces the procedures to leverage on these funds, all efforts should be put in place to exploit synergies as soon as possible. Further, it's also recommended that a dedicated technical group is elaborated to discuss on how to proceed and ease the subsidies application process. It's suggested that this technical group should at least be composed by IVE, VCE, VRCP and the cluster of architects. The underlying rationale of this suggestion is that along the customer journey there are different actors that come into play, and thus they may be eligible to leverage on some of the Programs of the Royal Decree presented in a previous section of this report.</p> <p>As of today, there are clear signs that the Program 2 may represent a candid opportunity to be canalized through the Citizen Hub and Valencian partners has also pointed out so. However, as of today it is still unclear how to leverage on</p>



		<p>this Program as the official release of the roll-out guidelines has not been published by the Regional Government.</p> <p>The next section will elaborate further on the monetary implication of the Royal Decree in the financial model and budget estimation of the Citizen Hub for the Valencia case.</p>
MEDIUM TERM	Location of the Citizen Hub and replication in Valencia and beyond	<p>Typically, One-Stop-Shops are established in specific parts of cities and have a defined and limited scope of work. This means that the resources allocated to one specific OSS, are expected to trigger demand in a specific neighborhood or a combination of a few.</p> <p>The Valencia case is quite particular in this point, as the Energy Office is already emplaced in a physical location and acts as an informational point for all citizens. This means that the current model of the Energy Office does not have a specific customer segment nor a predefined area of work (i.e. one or two neighborhoods). This is also observable in the Business Model Canvas, specifically in the Customer Segment item.</p> <p>In order to improve the impact potential, it's suggested to clearly define an area of work. This can be done at neighborhood level or even more in depth, at block-level. The definition of the areas of interest must obey a selection criterion, which should be composed of building stock and socioeconomic data.</p> <p>The same strategy is suggested for the roll-out of Citizen Hubs around the Region. In fact, having well-defined areas of work, for each OSS, eases the monitoring and management of the expected results of the office. In brief, the greater the information about customers and their dwellings, the higher the chances of success and hence a stronger market penetration rate.</p>
MEDIUM TERM	Online accompaniment – chatbot and/or phone application	<p>To guarantee the execution of the renovation project (i.e. the simple majority of votes in favor of execution), full force accompaniment must be emplaced. Not only offline, but also online.</p> <p>The OSS must have a strong digital backbone that's fully capable of solving homeowners' inquiries at all times. To achieve this, it's suggested that the website of the OSS has a chatbot with a programmed set of frequently asked questions (FAQ) and their respective responses.</p> <p>The idea behind the chatbot is that homeowners have all they need to solve their inquiries at all times. This will decrease the probability of neglecting the vote. In this</p>



		<p>sense, the accompaniment is not only performed in the OSS, but also remote, directly in their homes.</p> <p>Likewise, the same rationale applies for a phone application. The core feature of the application must be a FAQ section where the most common questions are addressed in an accurate and dedicated fashion. Ideally, the phone app, or the citizen hub service as a whole, must have a strong customer service capacity.</p>
<p>LONG TERM</p>	<p>Revenues Streams</p>	<p>The current revenue streams of the model are fully dependent on the public authority at all levels: national, regional and city level. Likewise, it's expected that a portion of revenues are derived from European projects, such as SaveTheHomes.</p> <p>The downside of these streams is that they are considered as fixed revenues with a predetermined amount of funding allocated to the citizen hub endeavors. This decision has a clear embedded risk: lack of capacity to adapt to market dynamics.</p> <p>Given the context of the Spanish renovation market, it's yet difficult to anticipate how the demand will increase and therefore the only viable strategy to fully grasp the demand behavior is by operating the citizen hub. During this quest, it may be possible that demand exceeds the capacity stressing the available resources and yet the current revenue streams have little potential to maneuver as the service delivery intensity fluctuates in time.</p> <p>Amidst this barrier, there are some options for additional revenue streams that emanate from the day-to-day functioning of the citizen hub. These are:</p> <p>Fee to contractors. Three methods:</p> <ol style="list-style-type: none"> 1. One-time fixed fee to join the contractors list 2. Monthly fixed fee per to stay and enter the list contractor list 3. Success fee: A flat rate for projects that are obtained through the hub <p>The latter is the suggested option by the Consortium Team, as it's a result of the citizen hub operation. Nevertheless, special attention should be put here as contractors may transfer this success fee to homeowners.</p> <p>Premium services: Three options:</p>



		<ol style="list-style-type: none"> 1. Tailored financial advice to support homeowners navigate through the existing financing products 2. Full-force support to succeed in the subsidies application process 3. Innovative workshops and training to contractors <p>All in all, it's suggested that at least some of these revenue streams alternatives are incorporated as part of the business model itself in the long term.</p> <p>Last, as previously discussed, in the short term there may be an additional revenue from the Program 2 of the Royal Decree. This will be further elaborated in the upcoming section: financial model and budget estimation.</p>
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Table 1 Recommendations Matrix - Valencia Pilot Case

Source: GNE Finance, 2022

Ought to remark that the renovation market in Spain is changing and gaining momentum. There are few factors that explain this shift in the market, however the most relevant one for the Pilot case is by far the implication of the Royal Decree and its roll out by the Regional Government. It's relevant to take this into consideration and therefore, consider the Business Model Canvas as a dynamic tool rather than a static one. It's further suggested that a technical dedicated group is put in place to pinpoint and exploit the synergies of the different Programs of the Royal Decree with the Citizen Hub service delivery and the Xaloc Network.

To reflect the interaction of the proposed business model with the local market dynamics, a SWOT analysis was conducted. This is better presented in Figure below.

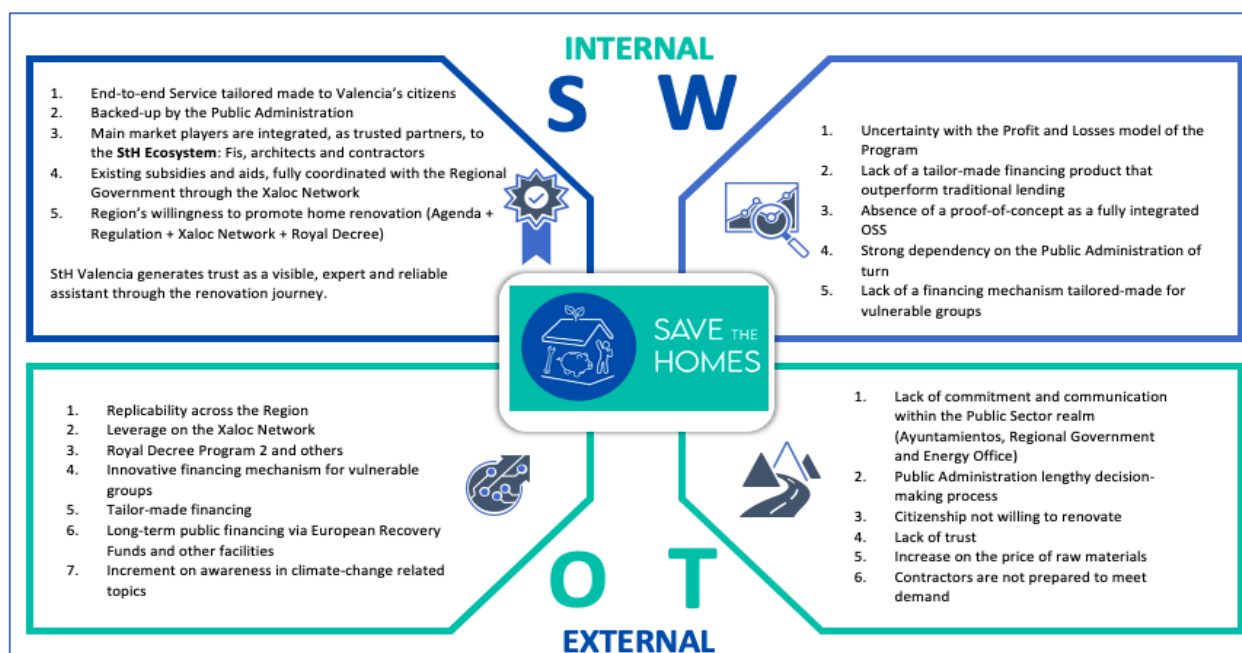


Figure 8 SWOT Analysis - Valencia Pilot Case

Source: GNE Finance, 2022



The SWOT analysis for the Valencia case brings light to the current context of the market and provides an overview of the focal points previously presented in Table above. From the analysis, it's observable that the strengths of the hub are backed up by the strong positioning and ambition of the Valencia Region to promote home renovation at large scale, which is materialized with the Xaloc Network.

The Consortium Team acknowledges the Xaloc Network as a key actor in the home renovation market and strong synergies are spotted, especially when it comes to subsidies processing. In complement, the Valencia Pilot case can take advantage of knowledge and experience of the SavetheHomes Ecosystem, considering that SavetheHomes' local partners also have strong involvement in other European Funded Projects, such as REMODULES and WELLBASED. It's therefore suggested that strong efforts and resources are allocated to sharpen the integration of contractors, clusters of architects, and financial institutions into the ecosystem⁴.

In respect of the weaknesses, it's clear that the existing financing alternatives are not tailored to the most vulnerable groups of the Region. In order to make the Renovation Wave inclusive in Valencia, it's suggested to design a de-risking financing mechanism that allows this specific segment to obtain tailor-made finance. The implementation of such a mechanism -such as Social Guarantee Fund- must necessarily involve private actors. This is still to be discussed and it's recommended to dedicate resources and efforts on this workstreams in the medium term. The other relevant point of the weaknesses lies on the strong dependency on the Public Administration of turn. Evidently, this is out of control as it depends on the local elections and therefore it represents the major weakness of the model and implementation plan.

As per the Threats of the model, the most significant one is the tendency of homeowners not willing to renovate their dwellings. Although this inherent threat has been deeply embedded in the market, it's expected that the Royal Decree, through the rollout of the subsequent Programs previously presented, successfully solve this threat and ultimately motivate homeowners to renovate their homes. To this end, smooth communication and expertise should be in place from the Regional and City level angles. Another threat worth mentioning is the possible increase of the cost of raw materials needed to execute the works. This negative impacted may discourage homeowners to approve the project and contractors to execute the works, as the quotes initially formulated may have contemplated costs that are no longer valid due to the market dynamics.

The Opportunities showcased in the SWOT Analysis are straightforward and were also presented in the recommendations table above. In brief, it suggests to leverage as much as possible on the Xaloc Network as well as the roll out of the Next Generation EU Funds, specifically the funds allocated to Program 2. Once the Regional Government launches the guidelines to apply to these funds, a technical group must be put in place. As of today, the guidelines have not been launched yet. Once they are officially launched, the full description of the subsidies will appear in the [following link](#).

All in all, the proposed Business Model for the Valencia Pilot Case is the result of connecting the dots between different initiatives at national (Next Generation EU Funds), regional (Xaloc Network) and local level (Valencia Energy Office), plus the experience and know-how of the consortium as a whole. It's evident that the Valencia Region has a strong potential that could be easily materialized if a Citizen Hub, exclusively in place to promote energy efficiency renovation, is implemented.

⁴ Deliverable 3.4 will focus solely on the existing financing products and thus the role of the financial institutions in the SaveTheHomes ecosystem for the Valencia Pilot Case.



The underlying rationale of this proposal lies on one of the major barriers to upscale home renovation projects, which is that the market is highly fragmented. Thus, to make home renovation projects happen at scale, only one single point of contact should be put together with a clear and strong brand. In these lines, the Consortium Team recommends leveraging on the Xaloc Network as the Regional Umbrella Entity that provides specific technical support to the individual Citizen Hubs, which should be in specific neighborhoods of Valencia. Ought to remark that each Citizen Hub must have a delimited area of work at neighborhood level, which can be referred as the Neighborhood Xarxa and/or Neighborhood Energy Office. Last but not least, the model should have a well-connected digital backbone that enables monitoring and remote management of the red of Hubs. Figure below better showcase the proposed model for the Valencia Pilot Case.

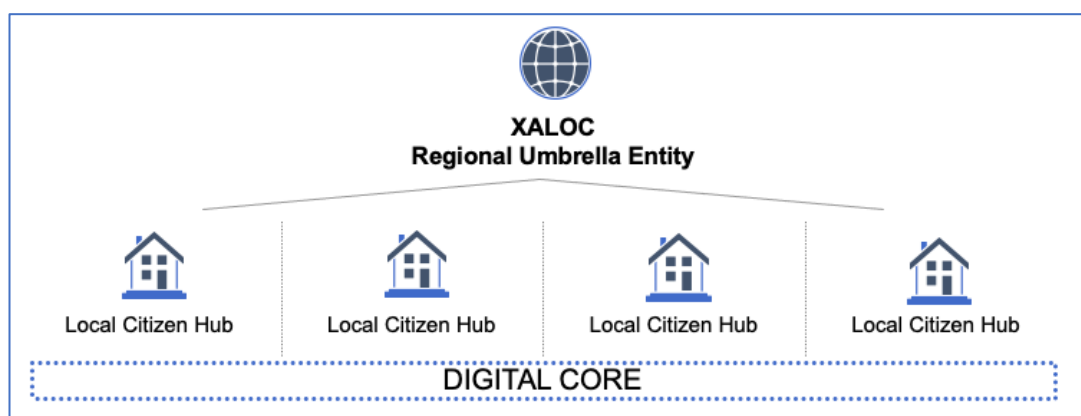


Figure 9 Proposed Model - Valencia Pilot Case

Source: GNE Finance, 2022

The next step is to conduct a financial analysis and budget projection for the proposed Business Model. This will be presented in the upcoming chapter.

Rotterdam Case

The design of the business model for the Rotterdam case is presented in this chapter. Different from the Valencia business model design, the Rotterdam HUB will focus on single-family dwellings. Thus, in contrast to Valencia, the decision-making process for single-family owners is simpler and smoother in comparison with multi-family dwellers.

In addition, the key actor in the project is an energy community. This idea is booming in the Netherlands, where energy communities are taking action in the energy transition by leveraging on the neighborhood approach (i.e. sense of belonging to a specific community). Five energy communities are currently operating in Rotterdam. Alex Energie (henceforth AE) is one of them and will be in charge of the OSS in Rotterdam. Moreover, this involvement of Alex Energie as a key actor in the project reinforces the local context of the OSS.

Alex Energie operates as a local neighbor who can be trusted by the homeowners within the same neighborhood. This creates the idea of local involvement and responsibility, which is clearly a strength of energy communities and thus a reliable option for homeowners.



The next paragraphs will take a deep-dive into the Rotterdam Case.

Rotterdam Citizen Hub Business Model Canvas

This section will deliberately describe and discuss each building block of the Business Model Canvas for Rotterdam. This is an extensive description of the actual Business Model Canvas, which mostly consists of bullet points. The full Business Model Canvas for the Rotterdam case is better presented in Annex 3.

Customer Segmentation

The first step of the BMC is the targeted segment of customers that is trying to reach and bring the value proposition. The overall customer segment of the OSS in Rotterdam consists of all the homeowners of the Prins Alexander neighborhood of the city. To be more specific, all homeowners of single-family houses are the target group of the OSS. Deliverable 2.6 pointed out that single-family buildings are the most common in the neighborhood and therefore targeted by the HUB. It must also be acknowledged that most homeowners in this neighborhood are from middle income and working classes. The goal of the Prins Alexander HUB is therefore also to support and guide homeowners who suffer from energy poverty.

In the first phase of the project, the pilot of 16 buildings will be targeted and supported by the activities of the Prins Alexander HUB. This means that this is the customer segment of the business model in the short term. In the second phase, the geographical focus is on the smaller neighborhoods of Prinsenland and Lage Land, which are located within the Prins Alexander neighborhood. Finally, in the third phase, all homeowners of the Prins Alexander neighborhood are targeted, which is the customer segment in the long term.

Value proposition

The central point of the value proposition is creating a neighborhood HUB for the homeowners of the Prins Alexander district. This HUB will make sure that everyone can assess a retrofitting process for energy and home renovations. This access is jargon free and frictionless for the homeowner, which is the crucial point in this value proposition. This value proposition originates from the pains from the homeowners. Relieving this pain is realized by several key activities, resources and partners that will be explained later.

This value proposition will eventually result in additional benefits. First of all, there is an increase in comfort for the homeowner by reducing energy losses and improving the air quality. Secondly, energy bills are lowered due to this reduction in energy losses and property value is increased due to the home improvements. Additional societal revenue, but also societal costs that are connected to the value proposition and BMC will be discussed further.

Channels

Several channels are going to be used. To categorize these channels, a distinction is made between offline and online channels.

First of all, the main offline channels originate from the energy cooperative Alex Energie that will run the HUB. They possess local connections within the neighborhood and can therefore reach the



homeowners. These channels consist of i.e. home visits, conversation with energy coaches, and neighborhood meetings. In addition, performed heat scans are used to recommend the services of the HUB. Also mobilization campaigns in the form of flyers, letters and brochures are used by this offline channel.

Next to the channels of Alex Energie, other local channels could be used. These consist of schools and sport communities, but also free weekly papers that are specified on the Prins Alexander neighborhood. This also stresses the importance of the role of the municipality, as they could provide resources to contact and use the channels. These channels could be used in all the five identified phases, discussed in the methodology chapter.

Secondly, several online channels will be used. The first and main obvious one is online advertising campaigns on social media. Moreover, two websites from the municipality and the website of Alex Energie are used as channels to reach potential customers of the HUB. Next to the municipality level online channels, local social media is used such as the “Nextdoor” platform. Finally, an application named “IkWoon” will be used. This application can act as a low-threshold entry for the collection of leads among the homeowners. It provides a virtual small talk on home improvements and provides users a set of home improvement standards based on their housing type. This may especially contribute to raising awareness among the users in Prins Alexander.

Customer relationships

Connected to the channels of the BMC, the customer relationships will be maintained through the HUB within the neighborhood. The main focus category identified in the BMC methodology will be *dedicated personal assistance*. The homeowners will be guided in the whole renovation process and can use the HUB as a contact point with all the necessary information. Crucial in this relationship is that this is long-term and interactive with the HUB and the homeowners.

Communities is also an possible category of focus. Communities, by connecting customers, but also contractors, could be a valuable asset to improve the HUB and meet the customer needs. An interesting option proposed by Alex Energie is to form a buyers collective for Collective Private Procurement. This identifies individual demands and requirements and bond them together to execute home renovations simultaneously.

In addition, *co-design* is applied to perform home renovations with the preferences of the homeowners and the suggested improvements of the technical experts.

Revenue Streams

In the short term, funding from the StH project could be used to cover the costs of the activities of the HUB. However, to operate in the long term, additional revenue streams are crucial. A possible alternative is funding from the municipality, provincial or national government, but this is definitely not guaranteed. An additional funding alternative are EU facilities such as ELENA. However, funding is not preferred, as this is a fixed form of revenue, whereas the costs and activities of the HUB are variable. Additional dynamic forms of revenue are therefore still necessary.

A possible innovative option is using several solar roof projects and selling the energy that is harvested. This revenue could be used to finance Alex Energie and the HUB. The umbrella organization of all energy cooperatives in Rotterdam, Energie van Rotterdam, is working on this specific project and it's expected to be fully in operation soon. It's therefore expected to count with a share of this revenue.



Further, it is considered to provide premium services that require a fee from the homeowners. Services that are considered are:

- Tailor-made solution design additional to the standard improvement components identified by IkWoon.
- Tailor-made financial advice additional to the standard financing options provided.
- Collective or tailor-made procurement services of e.g. materials.

Eventually, Alex Energie wants to set up an Energy Service Company (ESCO) to offer and deliver complete energy service packages.

Key resources

The key resources are relevant to bring the value proposition to the customers and are fundamental for the key activities of the next section. The first key resource is the personnel of the HUB that will do home visits and be present in the physical and online store. They will also use the provided tools and information that will be used in the HUB to help the homeowners, which means that these supporting tools and customer tools are also key resources to the HUB. Supporting tools are customer service protocols, calculations tools for technical and financial purposes and training. Customer tools consist of factsheets and leaflets about energy efficiency, leaflets and brochures with technical and financial solutions, and online applications and websites such as Ikwoon.

Moreover, the brand and credibility of Alex Energie is important. They operate as trusted neighbors in Prins Alexander and could therefore increase the usage of the services from the HUB. In order to provide this local trust and professionalism, support from the municipality is also needed.

Additionally, the list of contractors is the final key resource of the HUB. Without technical expertise and execution of the home renovation work, an OSS can not operate. This list is therefore crucial to have and construct before starting with the activities of the Prins Alexander HUB.

Finally, the physical locations where the office is located is of great importance to provide the services that are described in this chapter. The two locations that will be used in the short-term are the “Huis van de Wijk Het Lage Land” and “Huis van de Wijk Prinsenhof in Prinseland” and shown below.



Figure 10 Hub Physical Office in the Short Term - Huis van de Wijk Het Lage Land

Source: Alex Energie, 2022





Figure 11 Hub Physical Office in the Short Term - Huis van de Wijk 'Prinsenhof' in Prinsenland

Source: Alex Energie, 2022

Key activities

The key activity of the HUB is the guidance of the homeowners in the renovation process and to assist and provide them with information on all aspects. This will be done in local settings from people to people and to inform with a desk function. However, several other key activities are part of the overall service that it provides. These key activities are categorized into three aspects: Social, technical, and administrative.

Social

First of all, it is key to develop partnerships with other parties that may provide relevant resources, activities, and knowledge and to manage these relationships. Moreover, promotion of citizen participation through the identified channels is needed to attract homeowners of the customer segments. Also home visits are part of this promotion and provided by IkWoon online. In the short term Alex Energie could execute this, but additional support from partners is needed in the long term.

Technical

The main key technical activity is the technical and economic pre-diagnosis of the homes, a so called Energy Diagnosis. This will enable homeowners to see what home improvements are necessary. The next step is then to provide personal renovation measures and financial advice to be able to execute the measures. Management of the relationship with customers is therefore another activity that is crucial to execute the work after. Finally, supervision and quality control of the renovation work is needed to make sure that the partnered contractors deliver good work.

Administrative

The first key activity for this category is administrative support in procedures and application process for requesting financial options. In addition, management of services such as email or phone contacts is crucial to be able to help homeowners whenever necessary.

Key partnerships

Several partnerships are relevant for Alex Energie and their HUB. The following stakeholders could provide resources, expertise or other things for the OSS in Rotterdam:



POTENTIAL PARTNER	KEY ACTIVITY
The municipality of Rotterdam	They are important to give credibility to the activities of the HUB, provide additional resources and can provide guidance on subsidies/loans.
Contractors, installers and architects	These technical partners execute the actual renovation work and are therefore key to the HUB.
Energie van Rotterdam	They could provide additional revenue stream from the yet to be installed solar panels as discussed before. Establishing a relationship with them to discuss the yearly available revenue for Alex Energie is therefore needed.
Bouwhulp Groep	This is currently a partner in the Save the Homes project. However, in the long term they may also be relevant as partner, especially for the planning of the renovation and the control/quality assurance.
Woonwijzerwinkel	Woonwijzerwinkel is currently already operating as an organization to provide homeowners with services for their home renovations. This partner could be used to perform the Energy Diagnosis (in the medium and long term). They could also potentially provide a network with contractors and do quality control of the renovation work and build securities.
EnergieSamen	EnergieSamen is the national organization of all energy cooperatives in the Netherlands. Their support could be helpful in providing contractor contacts, expert advice and technical training for personnel.
Speeltuin Lage Land	This initiative is supported by the municipality of Rotterdam and their members are dealing with energy-related initiatives. They could therefore support in creating awareness for the HUB as energy-related initiative.

Table 2 Potential Partnerships Matrix - Rotterdam Case

Source: GNE Finance, 2022

Cost structure

As already discussed in the Valencia case, the costs of the HUB consists of fixed and variable costs. The fixed costs for the Rotterdam HUB are personnel salaries, web domains and ICT tools. Rent for a physical office is not needed in the short term, as flexible offices in the identified two buildings can be used. However, a larger office may be needed in the long term and this cost is part of the cost structure of the OSS. Variable costs are dependent on the market traction and consist of i.e. marketing and communication activities.



However, also acknowledged in the Valencia chapter already, some fixed costs may depend on the increase of renovations that is expected. Key activities such as Energy Diagnosis performed, but also personnel that are present in the offices will increase as the number of customers grow. This means that these costs also simultaneously increase and these costs will vary in the upcoming years. This is also showed in the financial projections.

Societal Costs and Societal Revenue

This section is also similar to the Valencia case. The Societal Costs are all costs of economic, environmental, and social aspects that are expected if the HUB fails to deliver its value proposition. This entails for example the energy poverty, higher energy costs, and social exclusion. Fortunately, when the value proposition is delivered correctly, Societal Revenue is expected. Improvement of the home environment by increased comfort, creation of employment, social cohesion and the decrease of energy consumption are examples of the environmental, economic and social impacts.

This section described the content of the building blocks of the BMC for the Rotterdam case. Based on this description, conclusions and recommendations were constructed for Prins Alexander. This is deliberately discussed and put into a table in the next section.

Conclusions and recommendations for Rotterdam's BMC

The following table contains the conclusions and provides recommendations for the Rotterdam Citizen HUB. This table is based on the key points of the BMC from Rotterdam described in the previous section. These recommendations provide some clear points of action. Also the recommendations are categorized into three time horizons. These are: short term (2022 to mid 2023), medium term (2023 to 2025), and long term (2025+).

HORIZON	FOCAL POINTS	RECOMMENDATIONS
SHORT TERM	Moving from a volunteer to a professional basis	<p>As of now, Alex Energie is a local energy cooperative that is run by volunteers. The current pilot project of 16 homes is therefore also executed on a voluntary basis. However, in order to meet the number of renovations that are expected in the upcoming years, working on a voluntary basis is not sufficient. This is mainly because the capacity will be limited, and the services of the Prins Alexander HUB can not be provided as the demand volume requires.</p> <p>On top of this, one of the key activities that must be emplaced is customer service. This can be done online and offline. In order to provide excellent customer service, it's extremely important to have at least 1 specific professional fully in charge of this service. Hence the relevance of having specific profiles working full time at the Hub. In fact, it's suggested to have a physical location that works as an office with open doors. Meaning that any citizen can enter the office to solve doubts or request support and thus again the need of counting with hired professionals working full time or part time.</p>



SHORT TERM	Strategic partnerships development to execute activities and related legal framework	<p>Connected to the previous recommendation, it is crucial to develop strategic partnerships to execute activities that can not be provided by Alex Energie. This will make sure that all the necessary services are available at the HUB and can guide homeowners through the whole renovation process. Based on the preliminary assessment of the current capabilities and resources of Alex Energie, strategic partners (or service providers) are needed to perform the following activities:</p> <ul style="list-style-type: none"> ● Financial & technical advice ● Marketing campaigns ● Quality control of work ● Administrative guidance <p>Additionally, one important factor to consider is the legal framework of the partnership with external stakeholders. It must be investigated how the contract should look like and what legal aspects are necessary to consider. This is also important to come to an agreement about the costs for the OSS to use the resources and capabilities from the specific stakeholder (i.e. an additional revenue for the strategic partner that contributes with their competitive advantage and therefore a cost for the citizen hub that outsources a specific activity or expertise).</p>
SHORT TERM	Test and improve the credibility of Alex Energie	<p>Currently, a pilot project of 16 homes is being implemented by Alex Energie. Alex Energie is trusted by the homeowners to perform their home renovations based on their local appearance in the neighborhood. This means that this pilot project is an important learning experience to be able to learn, test and improve on the activities and services that are provided during this project (hence considered pilot project or short-term growth plan). As a result, the credibility of Alex Energie can be enhanced in the future based on the comments of the homeowners, and the services and activities can be improved and professionalized whilst triggering word-of-mouth.</p>
SHORT & MEDIUM TERM	Construct a complete contractor list	<p>Contractors and installers are one of the most important partners of any one-stop-shop. Without these actors, home renovations cannot be executed.</p> <p>To be able to provide homeowners with several options of contractors for their home renovation work, it is crucial to have a contractor list ready and/or a well established network of contractors.</p> <p>Given the needs of the Hub in the short term, it's suggested to develop a strong network of contractors that have the specific capacities to perform the works of the first home renovations. The most efficient -and accurate- strategy to achieve such objective is to leverage on strategic actors such as The Municipality of Rotterdam as well as the WoonWijzer Winkel, and potentially the national EnergieSamen cooperation.</p>



		<p>Then, in the medium term, once the Citizen Hub concept is validated and up and running, an eligible list of contractors must be designed and announced offline and online. It's therefore suggested to define a set of criterion or filtering parameters that guarantees that the specific contractor firm has the capacity to perform the works. Some recommendations of criteria are: field/project type of expertise, relevant experience, company size, and legal and administrative aspects.</p>
MEDIUM TERM	Revenue streams: EU funding and on-grid energy production system (solar panels)	<p>To make sure that the HUB can be financially stable in the medium term, other revenue streams are necessary. One of these alternatives is to attract other funding sources. EU facilities such as ELENA and Life-program can provide funding that can be used to finance the Prins Alexander HUB in the medium-term.</p> <p>In addition, as already mentioned in the description of the BMC of the Rotterdam case, Energie van Rotterdam is working on community owned solar panels installation that is of interest for the Citizen Hub model. A share of the revenue generated from the energy production of the installed solar panels may be at Alex Energie's disposal. Thus, these funds may represent a candid revenue stream for the HUB. It's suggested to start discussions with Energie Van Rotterdam to assess how big this estimated revenue will be as well as defining additional opportunities of locations for other solar panels systems. This relationship may therefore be strengthened.</p>
MEDIUM TERM	Financial alternatives for homeowners with insufficient financial capabilities	<p>During the discussion of one of the several meetings with the Rotterdam partners, it was mentioned that approximately 15-20% of the applications of ETF loans are dismissed. This mainly is due to insufficient financial capabilities of citizens to meet the monthly payments and interest. According to recent changes in the national law, these financial requirements are stricter. As a consequence, some homeowners are unable to apply for any loan to execute home renovations. This is concluded as an inefficiency of the local market.</p> <p>Fortunately, there are other public funding alternatives available for these homeowners. However, these options are mostly subsidies, which means that only a share of the renovation work is covered. It is crucial to make sure that financing alternatives are available for homeowners who can not apply for a loan. Especially in order to combat energy poverty, which is one of the main challenges to increase the energy renovation rates in the EU. It is therefore recommended to form a dedicated working group to cope with this market inefficiency. To this end, the Consortium Team suggests exploring risk-sharing financial instruments to slightly improve the credit risk rating of homeowners to comply with local banking regulations to obtain the loans.</p>



<p>LONG TERM</p>	<p>Revenue streams: premium services</p>	<p>Finally, to make sure the Prins Alexander HUB can operate on the long term and be less dependent on funding, an additional revenue stream may be considered. This revenue stream can be premium services, which means that additional services of a higher quality can be used by homeowners for a small fee. The premium services that can be considered are as follows:</p> <ul style="list-style-type: none"> ● Tailor-made solution design additional to the standard improvement components identified by IkWoon. ● Tailor-made financial advice additional to the standard financing options provided. ● Collective or tailor-made procurement services of e.g. materials ● A premium energy consulting report provided by a technical expert partner. <p>Compared to the Valencia case, asking a contractor fee is not really an option for the Rotterdam OSS. This is mainly due to the fact that there is already a high demand and low supply for renovation work. This means that contractors are unwilling to pay an additional fee to join the list of the OSS. It's suggested to challenge this market assumption in the long term.</p>
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Table 3 Recommendations Matrix - Rotterdam Pilot Case

Source: GNE Finance, 2022

Following the description of the business model and the conclusions and recommendations for the Rotterdam OSS, a SWOT analysis is constructed. This originates from the fact that the local market is dynamic, which means that the business model components constantly evolve and change due to the needs of the targeted customers. The SWOT analysis touches upon this relationship between the local market dynamics and the business model components discussed before. The following Figure shows the SWOT analysis for the Rotterdam HUB.



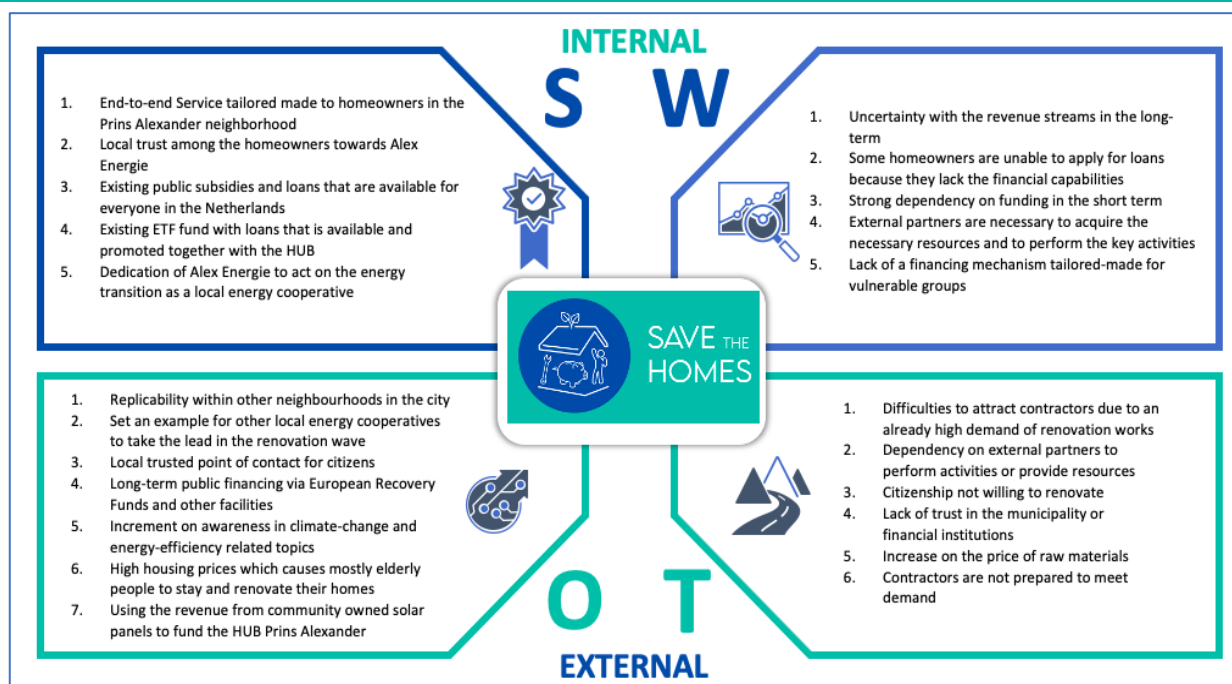


Figure 12 SWOT Analysis - Rotterdam Pilot Case

Source: GNE Finance

Looking at the strengths of the Figure above, it is clear that the local interaction of Alex Energie within the neighborhood is one of the greatest strengths. Mainly because it creates trust for the customers of the HUB. Also, the role out of the ETF loans and the national available subsidies and loans provides financing alternatives for the homeowners. Especially the ETF loans which are especially meant to be used by the homeowners that use the services of the HUB.

On the other hand, some weaknesses are identified that are relevant to recognize and deal with accordingly. First of all, it must be noticed that the revenue streams are uncertain and highly dependent on funding. As already mentioned in the recommendations, other revenue streams need to be investigated in the medium and long term to tackle this. Secondly, some homeowners are unable to apply for loans. Combining this with the fact that there is not a financial option focused on this group of homeowners, this could be viewed as a shortcoming of the market. Special attention needs to be paid in order to deal with this weakness. Finally, the strong dependency on external partners could be perceived as something vulnerable. Establishing long-term relationships with them is therefore crucial.

In addition, fortunately there are also some opportunities in the local market of Rotterdam. The local presence of Alex Energie as a trusted energy cooperative can set an example for other cooperatives to start other OSS and to replicate their concept in other neighborhoods in Rotterdam. This will create higher awareness in energy efficiency and eventually they take a lead in the proposed Renovation Wave. Moreover, the innovative revenue stream in the form of community owned solar panels is noticed as an interesting opportunity. Additionally, the local housing market in the Netherlands currently consists of very high housing prices. This forces more and more elderly people to stay in their homes, because they have very low monthly payments due to the low housing prices at the time they bought their homes. This may increase the interest of those homeowners to renovate.

In contrast to the opportunities, there are some threats that need to be acknowledged. The most important one is the fact that the supply of renovation work is already struggling to meet the demand



of renovation work. It is therefore not directly of interest for a contractor to join the list of contractors of the OSS, as they already have enough work to do. This already caused the option to use a fee for contractors to join the list for additional revenue to be dismissed in the Rotterdam case. However, considerable efforts are needed to make sure a list of contractors is ready to execute all types of renovation work for the homeowners that visit the HUB. Providing the homeowners a full list of those suppliers is crucial to make sure renovations are executed correctly. Most other threats identified in the Valencia case also apply to the Rotterdam case. However, one important difference is the lack of trust in the municipality and financial institutions. Homeowners are more likely to trust their neighbors, which means that Alex Energie plays a crucial role to provide this trust.

In respect of the administrative structure for the Rotterdam Case, it's suggested that Energie van Rotterdam performs the role of the umbrella entity and is in charge of most back-office related tasks. Furthermore, the possibility of funding the Alex Energie Hub in the medium term may also open the possibility to fund more Citizen Hubs located in different parts of the City. In fact, as there are 5 energy communities in Rotterdam, it may be the case that each energy community evolves as a Citizen Hub. This long-term expansion plan should be properly addressed and discussed with Energy van Rotterdam and the Municipality of Rotterdam. Figure below showcases the proposed model.

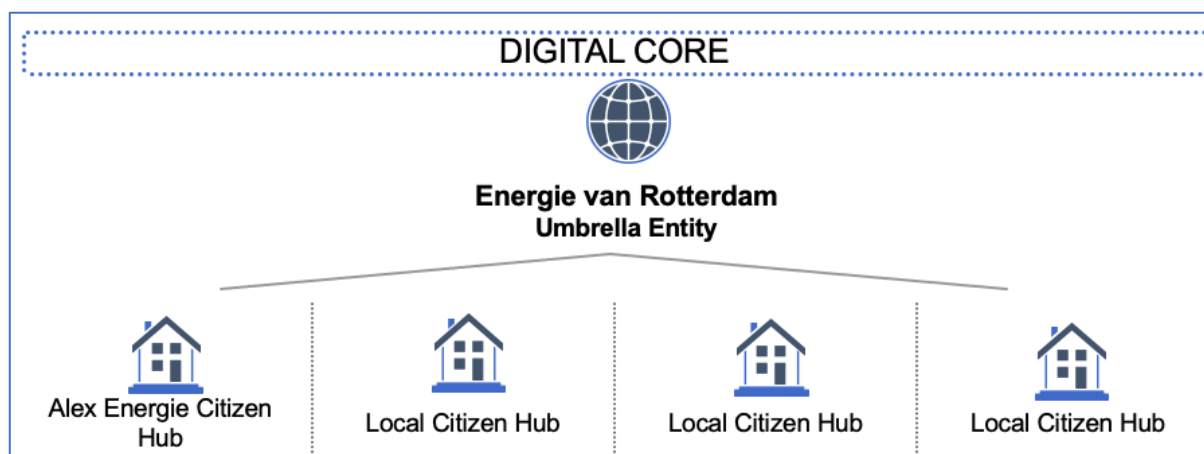


Figure 13 Proposed Model - Rotterdam Pilot Case

Source: GNE Finance, 2022

Once both Business Models have been explained and analyzed, the next step is to design a budget for the roll out of the model as well as financial projects to understand the financial self-sustainability capacity of the model. This is done in the following chapter.



6. Budget and Financial Projections

This section has the objective to showcase the budget and financial projections for both Citizens HUBs. The output of this chapter is the reflection of the business model for both cities, now considering the respective costs and revenue streams previously mapped on the Business Model Canvases of the previous chapter.

In order to fulfill the objective of this task, strong efforts were put together to first understand the local context of both cities to then incorporate the preferences and objectives of Project Partners into the respective models. Additionally, the Consortium Team leveraged on their experience in the matter, putting special emphasis on the expertise from the Opengela and HolaDomus Program based in Spain, where the first program is functioning in the Basque Country whereas the latter, in Olot, Catalunya.

In brief, the methodology to fulfill this task was the following. First, a specific number of renovations (i.e. sales objective) was set by Consortium Partners. Secondly, as per the objective of renovations alongside the Business Model Canvas, the cost structure was defined. This methodology is also known as reverse engineering. To fulfill this step, it was essential to define which activity is performed in-house and which ones will be outsourced. This distinction was presented in the business model canvas for each pilot case and thus it represents the starting point for the budget estimation⁵.

Thirdly, and probably the most difficult step, was to estimate the needed hours -or capacity- to perform the activities mapped in the previous step. The result of this step can be concluded as the needed human resources, in number of hours, per budget item. Then, as a fourth step, an approximate hourly cost was set by Project Partners to obtain the actual cost of personnel per key activity. For instance, if outreach and marketing efforts are estimated to require 50 hours and a flat rate of 15 euros per hour is established, then the estimated budget for that specific activity is 750 euros.

Then, in fifth place, the cost structure was projected for the set time horizon. For the financial modeling purposes, the first period is 2022 (i.e Year 1 = 2022). Then, the following time horizons were set: 2022 to 2024 and 2025 to 2029. The first-time frame comes to replace the timing of the SavetheHomes Project, which is 3 years, and the second time frame reflects the 5 years after project completion. These time frames were put in place to analyze the most accurate and realistic scenarios.

Last, but not least, revenue streams were incorporated into the model in order to pinpoint when the model will reach break-even⁶. Important to note that in most cases this type of business model does not reach break-even as the model itself is considered as a duty from the Public Authority and therefore market-driven revenue streams such as a fee to contractors are not feasible. Nevertheless, the Consortium Team ran the hypothetical exercise to incorporate additional revenue streams to analyze when the model would eventually break even.

The next paragraphs will expose the results of this part of the task.

⁵ For instance, if the Citizen Hub does not offer support on the subsidy application process, the monetary efforts related to this activity should not be included in the Citizen Hub Budget but instead in the Budget of the stakeholder in charge of offering this service. This is the case for the Valencia pilot case (Citizen Hub and Xaloc Network relation).

⁶ Break-even refers to reaching the specific point in time when profits are equal to the costs of the proposed model.



Valencia Case

For the Valencian Case, the objectives of renovation are 250 homes for 2022, 500 projects for years 2023 and 2024, and 600 projects for year 2025. For the following years, a 10% yearly-increase was assumed in the estimations resulting in 660, 726, 799 and 878 for years 2026, 2027, 2028 and 2029 respectively.

The cost structure for the Valencian case is composed of the estimated personnel, marketing and communication efforts and other costs. An additional cost stream is identified if renovation works are needed in the physical location of the Hub: Investment (Renovation Office). This last budget item is also presented as an upfront investment.

In respect of the personnel, three profiles are defined. These refers to the commercial/social profile, administrative role and technical team member. In brief, the first profile is needed for reaching out to the community of owners directly and to intermediate when needed. The commercial/social profile is envisaged to present the services to the community of owners either in the Hub or at their dwellings. Considering these capacities, the commercial/social profile is foreseen as a dual profile capable of establishing long-lasting relationships with homeowners whilst securing that homeowners decide to renovate.

In respect of the administrative role, it's envisaged as the front-office services. Further, this specific profile is expected to deal with all administrative related topics as well as data management and reporting. To this end, the administrative profile should have at least basic IT tools knowledge, specially in customer relationship management tools.

As per the technical profile, it's envisioned as the role in charge of all technical aspects of the home renovation project as well as energy consumption reduction and ideal set of measures support. Evidently, the technical team member should work closely with the commercial/social personnel.

Further breakdown on the rest of the budget items is better presented in Figure below.



Costs	Investment (Renovation Office)
	Personnel
	Renovation Program Responsible
	Commercial/Social
	Administrative
	Technician
	Total Personnel
	General Costs
	Rent
	Electricity, Wifi, Etc
	Insurances
	Prevention of Occupational Hazards
	Office Materials
	Total General Costs
	MKT & COMM
	Market Research
	MKT Campaings
	Merchandising and other materials
Events	
Digital MKT: Google Ads	
Total MKT & COMM	
ICT Tools	
Decentralisation activities	
Others	

Figure 14 Cost Structure - Valencia Pilot Case

Source: GNE Finance, 2022

Ought to remark that in the first months/years of implementation, the larger portion of the resources should be allocated in the Marketing and Communication (MKT & COMM) activities, as these are aimed at increasing the brand awareness and generating trust among the citizens. Evidently, this has to be online and offline, which is considered in the cost structure presented in the Figure above. On the same line, the items of the cost structure (such as rent, MKT campaigns or google ads) are expected to be rather fixed, whereas the amount of resources allocated to these specific item are expected to be dynamic and to increment as per the market needs. For instance, the budget for the google ads may increment from one year to another, as a means to stimulate demand. This is because the resources should be strategically used and adapted to the needs of the market (i.e. market conditions). Likewise, the decentralization activities item (such as events outside Valencia or other municipalities of interest) gains special relevance once the expansion plan is put in place.

The revenue streams of the financial model are divided in two groups: private and public revenue sources. The first group is proposed for the sake of the financial exercise, meaning that as of today there is no clarity whether Valencian project partners will impose such a fee. However, the Consortium Team strongly suggests to pursue this path or alternatively, the premium services fee, to decrease the dependency of funds coming from the public sector.

In respect of the public sources of funding, four out of five are rather common. These are: European Funding, Autonomous Community Funding, Regional Funding and City Council Funding. However, a new source of revenue is presented in the model which comes from the Program 2 of the Royal Decree



as explained in a previous chapter. Figure below showcases the breakdown of the revenue streams for the Valencian case.

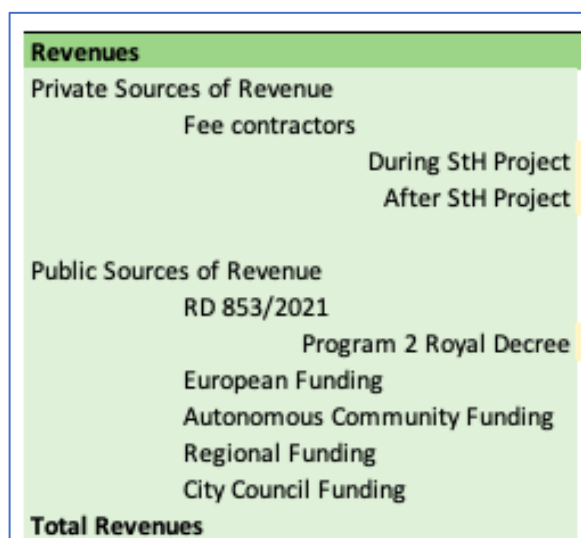


Figure 15 Revenue Streams - Valencia Pilot Case

Source: GNE Finance, 2022

Two revenue streams from figure above may gain significant relevance for the financial model. The first one is the possibility of charging a fee to contractors. For this case, two time frames are presented, which are linked with the time frames of the financial model (2022-2024 and 2025-2029). As per the specific fee, the Consortium Team recommends a percentage between 2-3%. For the financial exercise, a 2% fee was assumed.

As per the revenues coming from the Royal Decree, the maximum possible amount to receive is 800 euros. However, as of today there’s little clarity on how these funds will be actually obtained or whether the 800 euros will be split between the different actors involved in the projects’ planning and implementation (Citizen Hub – Architects relation). However, for the financial exercise these revenues are set at 800 euros per project executed, meaning that the funds are perceived at the end of the year. In other words, if a project starts in 2022, the funds will be perceived in 2023. Furthermore, these revenue streams are expected to last until 2026 as defined in the Royal Decree, but for the financial model these funds cease in 2027 as per the rationale previously explained.

Figure below reflects the cash flow of the model with only public sources of revenues.

Total Revenues	€	143.000,00	€	343.000,00	€	503.000,00	€	623.000,00	€	743.000,00	€	803.000,00	€	143.000,00	€	143.000,00		
Total Costs	€	407.375,00	€	494.925,00	€	537.300,00	€	623.850,00	€	623.850,00	€	623.850,00	€	623.850,00	€	623.850,00		
Cash Flows per period	-€	149.200,00	-€	264.375,00	-€	151.925,00	-€	34.300,00	-€	850,00	€	119.150,00	€	179.150,00	-€	480.850,00	-€	480.850,00
Accum. Cash flows	-€	149.200,00	-€	264.375,00	-€	416.300,00	-€	450.600,00	-€	451.450,00	-€	332.300,00	-€	153.150,00	-€	634.000,00	-€	1.114.850,00

In the Figure above it can be seen that it is highly unlikely to reach break even without a private source of revenue. In fact, the results of the accumulated cash flow of the exercise tend to be even more in deficit after 2026, mainly due to the cease of funding coming from the Program 2 of the Royal Decree.

In the case a 2% fee is imposed to contractors in 2026, break-even is reached in 2027 as shown below.

Total Revenues	€	143.000,00	€	343.000,00	€	503.000,00	€	623.000,00	€	941.000,00	€	1.020.800,00	€	382.580,00	€	406.538,00		
Total Costs	€	407.375,00	€	494.925,00	€	537.300,00	€	623.850,00	€	623.850,00	€	623.850,00	€	623.850,00	€	623.850,00		
Cash Flows per period	-€	149.199,98	-€	264.375,00	-€	151.925,00	-€	34.300,00	-€	850,00	€	317.150,00	€	396.950,00	-€	217.312,00		
Accum. Cash flows	-€	149.199,98	-€	264.375,00	-€	416.300,00	-€	450.600,00	-€	451.450,00	-€	134.300,00	€	262.650,00	€	21.380,00	-€	195.932,00



Likewise, from 2028 onwards the results of the exercise tend to have a higher deficit as the sources of funding coming from the Program 2 ceases.

Rotterdam Case

For the Rotterdam financial projections it is important to remember that the Rotterdam Project Partners joined the project in the final course of 2021, so these projections are still being defined. Conversations between Alex Energie and the Rotterdam Partners are still being held to better understand how the Citizen Hub will operate. Nevertheless, a first estimation of the financial projections have been produced with their support and an ulterior version of the financial model will be presented in the upcoming report D4.2.

The home renovations (sales) expected for the Rotterdam Pilot Case are 16, 150, 525 and 1.500 for years 2022, 2023, 2024 and 2025 respectively. The Rotterdam Case decided to work with this specific timeframe, as the Citizen Hub concept now incorporates Alex Energie and, as it was explained in the Business Model chapter, they have set up these targets.

The cost structure of the financial model for the Rotterdam case is showcased in Figure below. In this case, as in the Valencia case, different profiles were defined and the associated cost estimated. It is observable that staffing needs has been accurately pinpointed, varying from an energy coach to a potential financial advisor. Ought to remark that one of the immediate action point for Rotterdam's Citizen Hub concept is the definition and implementation of strategic partnerships with local actors. Once this action point is successfully tackled, the cost structure of the model may gain more detail and some items may be deleted as they would be performed by other players.

Active Neighbor
Energy Coach
Expert Technical Advisor
Architect
Social Advisor
Financial advisor
Procurement
Administration
Marketing
Management
TOTAL STAFF
Diagnostic toolset
Communication (website)
Communication (print etc)
Meeting & work space

Figure 16 Cost Structure 1 - Rotterdam Case

Source: BHG and AE, Steering Committee Meeting



Likewise to the Valencian case, the items needed to trigger demand are well-defined: Social Advisor, Marketing, Communication and Meeting & Work Space items. Special mention deserves the diagnostic toolset, which is expected to be key for conducting heat scans and other similar assessments when conducting the in-person visits.

As of today, there are no clearly defined revenue streams for the financial model of Rotterdam’s Citizen Hub as local partners are currently taking a deep-dive into the model and discussing it in the weekly Steering Committee Meetings. The input of these discussions, among others, are the suggestions previously showcased in this report. The on-going model definition is constantly discussed and validated with all project partners, specially the Municipality of Rotterdam, Bouwhulp Groep, GNE Finance and Alex Energie. The current model is presented in Figures below.

Average hour tariff €	70	2022						2023						
		Hours	Cost	Alex	Subsid.	Free of ch.	Remain	Net result	Hours	Cost	Alex	Charged	Free of ch.	Remain
Active Neighbor	50	€ 3.500	50		€ 3.500	0	€ -	150	€ 10.500	150		€ 10.500	0	€ -
Energy Coach	100	€ 7.000	50		€ 3.500	50	€ -3.500	150	€ 10.500	100		€ 7.000	50	€ -3.500
Expert Technical Advisor	200	€ 14.000	50	150	€ 14.000	0	€ -	150	€ 10.500	50		€ 3.500	100	€ -7.000
Architect	48	€ 3.360	0		€ -	48	€ -3.360	180	€ 12.600	0	180	€ 12.600	180	€ -
Social Advisor	32	€ 2.240	0		€ -	32	€ -2.240	150	€ 10.500	0		€ -	150	€ -10.500
Financial advisor	13	€ 896	0		€ -	13	€ -896	300	€ 21.000	0	150	€ 10.500	300	€ -10.500
Procurement	64	€ 4.480	0		€ -	64	€ -4.480	150	€ 10.500	0	150	€ 10.500	150	€ -
Administration	32	€ 2.240	32		€ 2.240	0	€ -	300	€ 21.000	0		€ -	300	€ -21.000
Marketing	40	€ 2.800	40		€ 2.800	0	€ -	160	€ 11.200	0		€ -	160	€ -11.200
Management	40	€ 2.800	0		€ -	40	€ -2.800	120	€ 8.400	0		€ -	120	€ -8.400
TOTAL STAFF	619	€ 43.316	222	150	€ 26.040	247	€ -17.276	1.810	€ 126.700	300	480	€ 54.600	1.510	€ -72.100
Diagnostic toolset	1	€ 2.720				1	€ -2.720	1	€ 2.720				1	€ -2.720
Communication (website)	40	€ 2.800				40	€ -2.800	40	€ 2.800				40	€ -2.800
Communication (print etc)		€ 500				0	€ -500		€ 500				0	€ -500
Meeting & work space	120	€ 3.000		120	€ 3.000	120	€ -	480	€ 12.000		480	€ 12.000	480	€ -
GRAND TOTAL	780	€ 52.336	222	270	€ 29.040	408	€ -23.296	2.331	€ 144.720	300	960	€ 66.600	2.031	€ -78.120

Figure 17 Financial Model for the Rotterdam Case - Work in Progress 1

Source: BHG and AE, Steering Committee Meeting

Average hour tariff €	70	2024						2025						
		Hours	Cost	Alex	Charged	Free of ch.	Remain	Result	Hours	Cost	Alex	Charged	Free of ch.	Remain
Active Neighbor	250	€ 17.500	250		€ 17.500	0	€ -	500	€ 35.000	500		€ 35.000	0	€ -
Energy Coach	250	€ 17.500	150		€ 10.500	100	€ -7.000	500	€ 35.000	150		€ 10.500	350	€ -24.500
Expert Technical Advisor	250	€ 17.500	150		€ 10.500	100	€ -7.000	500	€ 35.000	200		€ 14.000	300	€ -21.000
Architect	630	€ 44.100	0	630	€ 44.100	630	€ -	1.800	€ 126.000	0	1.800	€ 126.000	1.800	€ -
Social Advisor	525	€ 36.750	0		€ -	525	€ -36.750	1.500	€ 105.000	0		€ -	1.500	€ -105.000
Financial advisor	1.050	€ 73.500	0	525	€ 36.750	1.050	€ -36.750	3.000	€ 210.000	0	1.500	€ 105.000	3.000	€ -105.000
Procurement	525	€ 36.750	0	525	€ 36.750	525	€ -	1.500	€ 105.000	0	1.500	€ 105.000	1.500	€ -
Administration	1.050	€ 73.500	0		€ -	1.050	€ -73.500	3.000	€ 210.000	0		€ -	3.000	€ -210.000
Marketing	160	€ 11.200	0		€ -	160	€ -11.200	160	€ 11.200	0		€ -	160	€ -11.200
Management	120	€ 8.400	0		€ -	120	€ -8.400	120	€ 8.400	0		€ -	120	€ -8.400
TOTAL STAFF	4.810	€ 336.700	550	1680	€ 156.100	4.260	€ -180.600	12.580	€ 880.600	850	4.800	€ 395.500	11.730	€ -485.100
Diagnostic toolset	1	€ 2.720				1	€ -2.720	1	€ 2.720				1	€ -2.720
Communication (website)	40	€ 2.800				40	€ -2.800	40	€ 2.800				40	€ -2.800
Communication (print etc)		€ 500				0	€ -500		€ 500				0	€ -500
Meeting & work space	480	€ 12.000		480	€ 12.000	480	€ -	480	€ 12.000		480	€ 12.000	480	€ -
GRAND TOTAL	5.331	€ 354.720	550	2160	€ 168.100	4.781	€ -186.620	13.101	€ 898.620	850	5.280	€ 407.500	12.251	€ -491.120

Figure 18 Financial Model for the Rotterdam Case - Work in Progress 2

Source: BHG and AE, Steering Committee Meeting

Although the model requires fine tuning and proper definition of revenue streams, it’s presented as significant progress for the Rotterdam Case given the time that has passed since they joined the project as well as the innovative approach of Alex Energie, as an energy community, spearheading the Citizen Hub. From the figures above, it is observable the progressive growth strategy, which is reflected by the sales objective as well as the needed hours per budget item. However, a clear definition of the revenue streams (surplus of energy production from solar panels, public funding



options, etc) is sorely needed and will be the focal point of the upcoming weeks and will be then reported in D4.2.

As final remark to this part of the task, a financial model template in excel was built and shared with both project partners. The idea of this effort is to provide both pilot cases with an automatized financial model that can be easily modified to test, assess and analyze the different implementation scenarios and growth plan of both citizen hubs.



7. Conclusion and Final Reflections

The development of the Business Models for both Pilot Cities is presented as a major milestone for the SavetheHomes Project. It is thus considered as a tangible starting point for transitioning from a design phase for an implementation phase.

It is expected that along this transition phase the model itself will be constantly reviewed and monitored together with the financial model projections. In fact, these two outputs go hand by hand as one is the representation of the other. The underlying rationale behind this exercise is that, when it comes to the day-to-day operation of the Citizen Hubs, the market arena is rather dynamic and some adjustments may be required on the way. This must come as no surprise, especially considering that the home renovation market is still considered as a market that is maturing and shaping up, therefore there is no single formula that guarantees total success when touching ground and outreaching demand. Nevertheless, this report is presented as a solid starting point to start operating both HUBs.

In the Valencia case, it is particularly interesting the different initiatives that are shaping up in both, regional and local Level. On the one side, there is the regional initiative called the Xaloc Network which aims at establishing a vast set of offices across the region, of course starting in the municipalities with the larger building stocks and population. On the other hand, the city-level Initiative of the Energy Office is an excellent example of an operative office, with proper personnel and well equipped capacity, not only to serve individual homeowners, but also groups of them. Worth to be mentioned on top of both initiatives, is the national initiative deployed through the Next Generation EU Funds. These Funds will be deployed in the form of six different Programs. It is therefore expected that these Programs are incorporated in the revenue streams of the financial model for the Valencian case (as they were included in the financial projections), starting on Program 2 and further progressing to the other Program according to the compatibility between Programs and of course, the scope of the Hub.

Further in the Valencian case, it is important to mention that Property Managers play an active role in the whole renovation ecosystem. It is yet to be fully agreed which activities they will perform, and the necessary tools and resources needed to perform them. At a glance, the Citizen Hub concept for the Valencian Case is specializing in pre-project execution tasks, such as the pre diagnosis assessment. This can be of interest to Property Managers as they can leverage this tool to sharpen their value proposition and services offered to communities of homeowners. In fact, it may be the case of proactive Property Managers, who spearhead the renovation process and thus act as intermediaries between the Hub and communities of owners. It is therefore suggested to dedicate special resources and efforts to find common ground with these stakeholders. All in all, the Citizen Hub concept of the Valencian case is expected to exploit the existing synergies with the Xaloc Network and Property Administrators. The capacities to be put in place by the Xaloc Network are well described in the Business Model Canvas as well as the Financial Model, being these rather administrative and procurement related: subsidies application process and works licenses application process.

The budget items for the Valencia case are to some extent similar to the Rotterdam case, where the main difference is on the amount of dedication (hours) per item as well as the numbers of activities in-house and outsourced. In detail, the Citizen Hub concept for the Rotterdam Case is heavily dependent on the yet-to-be enacted strategic partnerships with different stakeholders. From an operational point of view, this is a necessary first approach to try the Hub model to then gain expertise and start preparing for scaling up.

In fact, one of the main challenges that the Rotterdam Hub, i.e. Alex Energie, is facing is the transitioning from a volunteer basis to a professionalized basis. This quest deserves special attention



and excellent execution because the major hypothesis of the model is that the citizens trust their neighbors rather than “external” companies and stakeholders. The additional degree of difficulty in this point relates to the capacity to transition to a professionalized basis without losing the “neighborhood approach”. For instance, some of the new hires may live in different parts of the city and thus the sense of belonging may dilute between personnel. Likewise, the higher the number of key activities outsourced to external partners, the higher the risk of losing the neighborhood approach. The proposed solution to cope with these risks is the development of a strong brand that is easily recognized and related to the neighborhood of Prins Alexander Area. In fact, it is strongly suggested to develop a brand that incorporates unique local characteristics that differentiate them from the other parts of the city.

All in all, the output of this report is ready to be tested in the field in both pilot cities and the results of such roll out will be reported in upcoming deliverables. Last but not least, the Consortium Team presents a final reflection that touches upon the home renovation market as a whole, regardless the local context:

Although the work carried out with both pilot cities was significantly different in all aspects, starting with the building stock and sociodemographic characteristics and ending with the rhythm of work and decision-making processes, there was one common denominator for both cases. This common ground refers to the reluctance to integrate market-driven revenue streams to the model.

As a result, the question of what is actually needed to incorporate this type of revenue to the daily-operation of Citizen Hubs and One-Stop-Shops across Europe arises and yet there is no silver-bullet to tackle this question with proper market data.

Hence, the only way to truly start grasping the latent need of additional revenue streams to the model relies on transitioning from paper to reality. In other words, testing the model and starting to interact with demand with repetitive learning cycles similarly to any successful start-up: lean and agile.



8. Bibliography

Milin, C., & Bullier, A (2021). Towards large-scale roll out of" integrated home renovation services in Europe"

Osterwalder, A., & Pigneur, Y. (2010). *Business model generation: a handbook for visionaries, game changers, and challengers* (Vol. 1). John Wiley & Sons

Richardson, J. (2008). The business model: an integrative framework for strategy execution. *Strategic Change*, 17(5–6), 133–144. <https://doi.org/10.1002/jsc.821>



9. Annexes

1. Annex 1: Overview chart of all the programs assessed

Name of OSS	Country	Type	Target	Technical assistance	Contract relations	Subsidies	Financing
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)	✓	✓	✓	✓
SMART CITY Litoměřice	Bulgaria	Public	Single and multifamily housing	✓		✓	
BetterHome	Danemark	Private	Single-family housing	✓	✓		✓
ZERObolig	Danemark	Private	Single-family housing	✓	✓		✓
SustainSolutions	Danemark	PPP	Single, multifamily housing and public buildings	✓	✓		✓
Frederikshavn OSS	Danemark	PPP	Single-family housing	✓			✓
SPEE	France	PPP	Multifamily housing	✓	✓	✓	✓
OPERENE	France	Private	Multifamily housing	✓	✓	✓	
Dorémi	France	Social and solidarity economy company	Single-family housing	✓	✓		



Oktave	France	Mixed economy company	Single-family housing and public buildings	✓	✓	✓	
FAIRE	France	Public	Single-family housing	✓	✓	✓	✓
Tinergie	France	Public	Single and multifamily housing	✓	✓	✓	✓
Île-de-France-Energies	France	Public	Single and multifamily housing	✓		✓	✓
ARTEE	France	Mixed economy company	Single-family housing	✓	✓	✓	✓
REH	France	Private (online hub)	Single-family housing	✓		✓	✓
Amelio Habitat Durable	France	Public	Multifamily housing	✓		✓	✓
Ma Rénov	France	Public	Single and multifamily housing	✓	✓	✓	✓
Aroc Occitanie	France	Public & Mixed economy company	Residential Building (Single-family housing)	✓			✓
Facirénov	France	PPP	Single and multifamily housing	✓	✓	✓	✓
Heero (previously Mon Carnet)	France	Private	Single-family housing	✓	✓	✓	
ProRetro	Germany	PPP	Residential Buildings	✓	✓		✓
Energieheld	Germany	Private	Single-family housing	✓	✓		
KfW	Germany	Bank	Single-family, companies, public buildings	✓	✓	✓	✓
SheeRenov	Hungary	PPP	Multifamily housing	✓		✓	✓
SuperHomes	Ireland	Public (not-for-profit enterprise)	Single-family housing	✓	✓	✓	✓
ProEnergy Homes	Ireland	PPP	Single-family housing	✓		✓	✓
Tighean Innse Gall	Ireland	Non-profit	Single-family housing	✓		✓	✓
ANPost - Green Hub	Ireland	PPP	Single-family housing	✓		✓	✓



Sharing Cities	Italy	Public	Private and social housing units	✓		✓	✓
Mantova OSS	Italy	Public	Multifamily housing	✓	✓	✓	✓
Padova Fit	Italy	PPP	Single and multifamily housing	✓	✓		✓
LABEEF	Latvia	PPP	Multifamily housing				✓
Riga Energy Agency	Latvia	Public	Multifamily housing	✓		✓	✓
De Woonpas	Netherlands	Private	Single-family housing	✓	✓		✓
De energiebespaarders	Netherlands	Private	Single-family housing	✓	✓	✓	✓
WOAB	Netherlands	Private (Social enterprise)	Single-family housing	✓	✓	✓	✓
Energie samen	Netherlands	Non-profit	Multifamily housing and larger projects	✓	✓	✓	✓
Energiesproong	Netherlands	Non-profit	Social and Single-family housing	✓	✓	✓	
Reimarkt	Netherlands	Private	Single and multifamily housing	✓		✓	✓
WiiBWijzer Winkel Rotterdam	Netherlands	Private	Single-family housing	✓	✓	✓	
Balanshuis	Netherlands	Private	Single, multifamily and public buildings	✓	✓		
Wocozon	Netherlands	Non-profit	Housing association	✓	✓		✓
Bolig Enøk	Norway	Private	Single-family housing	✓	✓	✓	
HolaDomus	Spain	PPP	Single-family housing	✓	✓	✓	✓
Opengela	Spain	PPP	Multifamily housing	✓	✓	✓	✓
SiRE	Spain	Private	Multifamily housing	✓	✓	✓	✓
Ensanche 21 Zabalgunea	Spain	Public	Single family and public buildings	✓	✓	✓	
ARRUR of the Covibar	Spain	Public	Single and multifamily housing	✓		✓	✓



PLAN CABANYAL	Spain	Private	Single, multifamily and public buildings	✓	✓	✓	✓
HousEInvest	Spain	Public	Multifamily housing		✓	✓	✓
RetrofitWorks	UK	Private	Single-family housing	✓	✓	✓	✓
Parity Projects/ Ecofurb	UK	Private	Single and multifamily housing	✓	✓		✓
Refurb	EU	PPP	Single and multifamily housing	✓	✓	✓	✓
Solution4 Renovation	Spain, France, Ireland	Non-profit	Single, multifamily and public buildings	✓	✓	✓	✓
Intereg Sudoe Rehabilitate	Spain, France, Portugal	PPP	Private housing and public buildings	✓	✓		✓

PPP = Public-Private Partnership

PPCP = Public-Private-Citizen Partnership



2. Annex 2: Business Model Canvas – Valencian Pilot Case

11 - Societal Costs <ul style="list-style-type: none"> - 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 <p>For homeowners: Frictionless <i>access</i> to an energy efficient, accessible and comfortable home.</p> <p>For contractors, professionals, and financing entities: candid project pipeline</p>	10 - Societal Revenue <ul style="list-style-type: none"> - 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 <ul style="list-style-type: none"> - Xaloc network - VCE - IVE and GVA - VRCP - Property Managers - GNE Finance - UIPI and StH Consortium - City Council, Plan Cabanyal, Right to Household Office - AVAENSEN, ASELEC - Professionals associations and <i>colegios</i> - Financial Institutions 	7 - Key Activities <ul style="list-style-type: none"> - OSS's personnel onboarding - Technical and economic pre-diagnosis of the home and potential energy renovation measures - Contractors' validation process - Service delivery workflows - Customer journey - Develop jargon-free information material for HO - Subsidies and licenses processing (Xaloc Network) - Data gathering and analysis - Monitoring of on-going, 		4 - Customer Relations <ul style="list-style-type: none"> - Dedicated personal assistance - Long term - Automated services - Communities - Co-design of projects - Energy Renovation Citizens' School as a participatory group formed by homeowners to exchange doubts and advice, with the support of the Energy Office 	1 - Customer Segments <p>Primary focus: Community of Valencian homeowners in multifamily buildings.</p> <p>Secondary focus: single-family Valencian homeowners</p>



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	<p>planned and failed projects</p> <ul style="list-style-type: none"> - Development of partnerships (local associations and Fis) - Workshops and events - Mediation between users and contractors - Post renovation follow-up - Roll-out of a neutral financing brochure 			
	<p>6 - Key Resources</p> <p>Personnel</p> <ul style="list-style-type: none"> - Physical office - Web portal - Brand - Contractors list - Protocols <p>Supporting tools for staff</p> <ul style="list-style-type: none"> - Customer service protocol - Files management platform - Energy efficiency guides - Technical and financial calculation tools - Services Manual, phone assistance & Training program (Xaloc) - Sociodemographic and building data 		<p>3 - Channels</p> <p>Offline</p> <ul style="list-style-type: none"> - EO front-desk and appointed interviews - Workshops and target events: monthly workshops on energy renovation, renewable energies for self-consumption, electric and gas bills, energy saving at home, energy communities. - Community of homeowners meetings, through the collaboration of Administradores de Fincas - Leaflets, posters, and bus stops ads - Information points including other municipal premises (e.g. municipal markets) and the Xaloc network - StH Ambassadors promoting 	





	<p>Customer tools</p> <ul style="list-style-type: none"> - Energy efficiency factsheets and leaflets - Self-diagnosis tools - Comparative tables with technical and financial solutions - Aids and subsidies table 		<p>the project</p> <ul style="list-style-type: none"> - Word-of-mouth - Newspapers - Collaboration with banks offices and real estate offices at neighborhood level <p>Online</p> <ul style="list-style-type: none"> - EO social medial channels and monthly newsletter - EO webinars and workshops: monthly workshops also organized online - External webinars and events attended - Google Ads and paid promotion -Xaloc website 	
<p>9 - Cost structure</p> <ul style="list-style-type: none"> - Personnel - Office utilities - Marketing and communication actions - ICT tools - Travel/ outside events 			<p>5 - Revenue Streams</p> <ul style="list-style-type: none"> - 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' 	





3. Annex 3: Business Model Canvas – Rotterdam Pilot Case

11 - Societal Costs <ul style="list-style-type: none"> - Environmental unawareness - Energy poverty - ‘Renovation poverty’ i.e. citizens cannot afford funding or loans for renovation investments - High energy costs - Low standard of living due to outdated housing - Social exclusion - Lack of specialized workforce - Lack of quality in construction works - Unemployment - Healthcare 		2 - Value Propositions <p>Jargon free & frictionless access to the retrofitting process provided by a clear and trusted touchpoint, which results in:</p> <ul style="list-style-type: none"> - Increased comfort by reduction of energy losses, better air quality and overall wellbeing. 	10 - Societal Revenue <ul style="list-style-type: none"> - Increased comfort, wellbeing, and productivity of residents - 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 <p>The municipality of Rotterdam</p> <ul style="list-style-type: none"> - They are important to give credibility to the activities of the HUB, could provide additional resources/facilitation at development stage and can provide guidance on subsidies/loans. <p>Contractors, installers and architects</p> <p>These technical partners execute the actual renovation work and are</p>	7 - Key Activities <p><i>Social</i></p> <ul style="list-style-type: none"> - Development of partnerships with other parties that may provide relevant resources, activities, and knowledge - Promotion of citizen participation through the identified channels. - Home visits. This also provided online by Ikwoon. Short term by Alex Energie 	<ul style="list-style-type: none"> - Lower energy bills - Increased property value 	4 - Customer Relations <ul style="list-style-type: none"> - Dedicated personal assistance with local people - Communities - Buyers collective for Procurement 	1 - Customer Segments <p>Homeowners from middle and working classes of single-family households</p> <p>Households who suffer from energy poverty</p> <p>Stage 1: Pilot project with 16 homes in the Neighbourhood of Prins Alexander</p> <p>Stage 2: Het Lage land & Prinsenland neighbourhoods</p> <p>Stage 3: The whole Prins Alexander area</p>



<p>therefore key to the HUB. The actual companies still need to be determined with the help of other partners and local contacts.</p> <p>Energie van Rotterdam. -They could provide additional revenue stream from community-owned solar panels.</p> <p>Bouwhulp Groep. - In the long term they may also be relevant as partner, especially for the planning of the renovation and the control/quality assurance.</p> <p>Woonwijzerwinkel - This partner could be used to perform the Energy Diagnosis in the medium and long term (1000 homeowners in 2022 for free). They could also potentially provide a network with contractors for isolation works and solar panels and do quality control of the renovation work and build securities.</p>	<p><i>Technical</i></p> <ul style="list-style-type: none"> - Technical and economic pre-diagnosis of the homes (Energy Diagnosis). - Providing personal renovation measures. This is provided by the IkWoon application - Helping define citizen needs into demand and tailor made requests. Managing relationships with the contractors - Supervision of the executed work - Providing financial advice. A partner is needed to perform this activity. <p><i>Administrative</i></p> <ul style="list-style-type: none"> - Administrative support in procedures and application process for requesting financial options. A partner is needed to perform this activity 			
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<p>EnergieSamen.</p> <ul style="list-style-type: none"> - Their support could be helpful in providing contractor contacts, expert advice and technical training for personnel <p>Speeltuyn Lage Land</p> <ul style="list-style-type: none"> - Support in creating awareness and providing physical access to information for the HUB as energy-related initiative 	<ul style="list-style-type: none"> - Management of services such as email or phone contacts <p>6 - Key Resources</p> <p>Personnel</p> <ul style="list-style-type: none"> - Physical office (“in-house”, open hours) - Online office <p>Brand and credibility</p> <ul style="list-style-type: none"> - Alex Energie (trusted neighbourhoods) - “Municipality support” <p>Contractors list</p> <p>Supporting tools for staff</p> <ul style="list-style-type: none"> - Customer service protocol - Technical and financial calculation tools - Training for social, technical, and administrative support <p>Customer tools</p> <ul style="list-style-type: none"> - Energy efficiency factsheets and leaflets - Leaflets and brochures with technical and financial solutions for 		<p>3 - Channels</p> <p>Offline</p> <ul style="list-style-type: none"> - Alex Energie <ul style="list-style-type: none"> • home visits • energy coaches • heat scans • Mobilization campaigns with flyers or letters • Neighbourhoods meetings <p>Other parties and resources are necessary to keep using these channels in the long term, because of the limited capacity of Alex Energie.</p> <ul style="list-style-type: none"> - Municipality channels: <ul style="list-style-type: none"> • Gebiedsorganisatie • Gebiedscommissie/ Wijkraad School communities - Public channels <ul style="list-style-type: none"> • SME and sport associations • Free weekly papers (Havenloods & Prinsenlandkrant) 	
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	<p>citizens</p> <ul style="list-style-type: none"> - Leaflets and brochures with technical and financial solutions for suppliersAids and subsidies information (online) - IkWoon application 		<p>Online</p> <ul style="list-style-type: none"> - Advertising campaigns: social media - Alex Energie - voor en door bewoners en organisaties in Prins Alexander. - IkWoon application - Woonwijzerwinkel - Municipality channels: <ul style="list-style-type: none"> • Duurzaam010.nl/Pri nsenland-Het Lageland • Rotterdam.nl • Mijnrotterdam.nl • Gemeentepeiler app • Social media Rotterdam.nl - Neighbourhood social media <ul style="list-style-type: none"> • Nextdoor platform • Website 	
<p>9 - Cost structure</p> <ul style="list-style-type: none"> - Personnel - Physical office (not initially) - Web domain - Marketing and communication actions - ICT tools 			<p>5 - Revenue Streams</p> <p><i>Short term</i></p> <ul style="list-style-type: none"> - Funding from the EU (StH and other similar projects) <p><i>Long term</i></p> <ul style="list-style-type: none"> - National or provincial and municipality funding possibilities - Other EU Facilities for funding (such as ELENA facility, Life-program etc) 	





		<ul style="list-style-type: none"> - Using the (small) revenue from several solar roof projects of Energie van Rotterdam - Premium services. Services that are considered are: <ul style="list-style-type: none"> • Tailor-made solution design additional to the standard improvement components identified by IkWoon. • Tailor-made financial advice additional to the standard financing options provided. • Collective or tailor-made procurement services of e.g. materials • A premium energy consulting report provided by a technical expert partner. - An Community Energy Service Company (Community-ESCO) to offer and deliver complete energy service packages
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