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1 Executive Summary

This report presents the tools and instruments that are used within the Save the Homes project. These tools and instruments range from small checklists to large simulation models, and can be used for advice, support and implementation. During the project several tools, guidelines or instruments have been developed, or were already developed and were used in the project. This deliverable gives an overview of all these tools. By structuring the tools into the phases, extent and by city the matrix in this deliverable acts as a gateway to the available tools.

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2 Tools and instruments

2.1 One Stop Shop

Save the Homes aims at setting up a One Stop Shop (OSS). One place where citizens can come to, get advice on how to renovate their home, how to do it, where to look for solutions find a contractor and even find guidance towards finance and aftercare. The two pilot cities (Valencia and Rotterdam) both have a different approach to set up such a One Stop Shop. Neither of them has a fully functional OSS, due to several legitimate reasons, but both cities have gained a lot of knowledge about how to assist citizens in their search for a more sustainable home. Within the project a lot of tools and instruments are developed to help them. Some of these instruments are directly aimed at citizens, other instruments are for the professional to us in their advice, support or implementation trajectory. Some instruments are just for a project , others are available for the whole city/region.

A OSS that covers alle functionalities is a huge task. Between the submission and the proposal ant the point we reached at the end of the project, an insight in what is needed for a home renovation is gained. Perhaps it is even not possible to make an OSS in a way that all functionalities that are associated with performing a sustainable renovation, are incorporated in one entity. Therefore, we created a list of all tools and instruments of Save the Homes and put it in an accessible matrix. Ranging from a simple checklist towards a sophisticated digital tool. That way, when a city wants to replicate a part of the functionality that was used in either Valencia or Rotterdam, they can find the tools to do so. It also shows how broad the services of a One Stop Shop can be, and make clear that you have to set boundaries for the service that you want to offer through the OSS.

2.2 Customer journey

The matrix is based on the Save the Homes customer journey. It follows the five phases of

> 0. Onboarding (17)
>
> 1. Design (18)
>
> 2. Elaboration (18)
>
> 3. Construction (6)
>
> 4. In-use (6)

It is not surprisingly that the first three phases have the most tools and instruments (approximately 18) and that Construction and In-Use have fewer instruments (6). These phases were not often reached. And when they were reached it is not completely within the Save the Homes approach. In Valencia for example citizens then tend to a contractor, and in Rotterdam, in these phases the building collective was in the lead, and no integral part of Save the Homes.
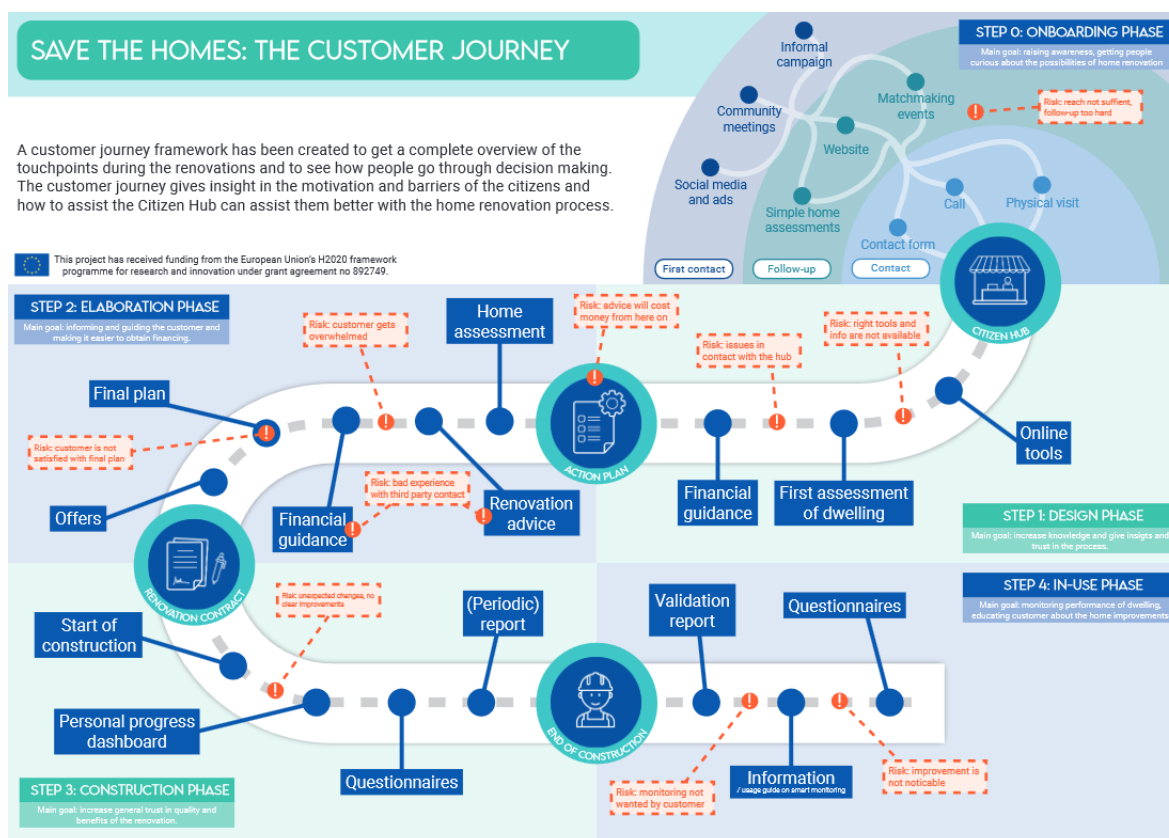

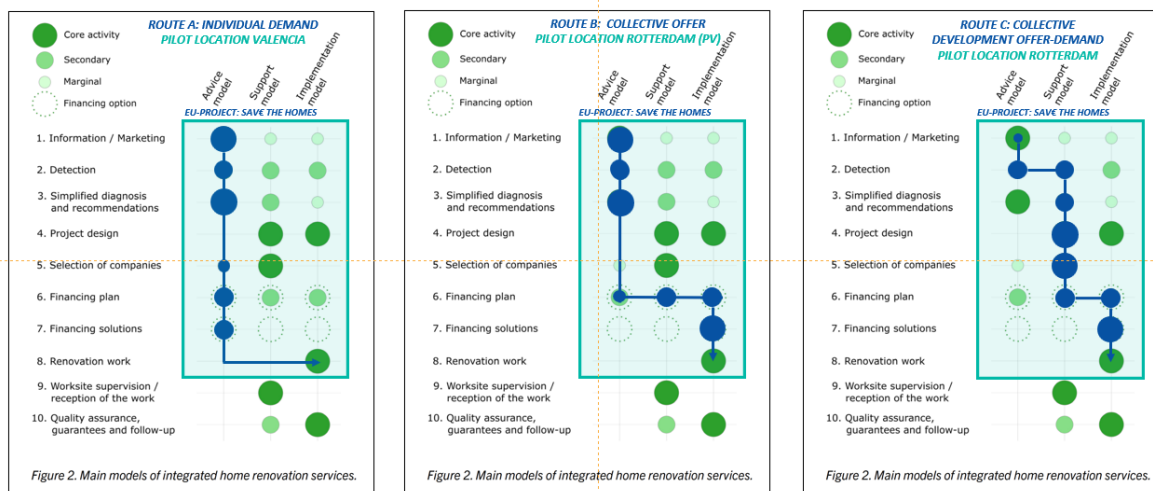*Figure 1 Save the Homes customer journey*

2.3 Structure

This list of tools is structured in several ways. First the city where it is used is mentioned. Then the tools are ordered in phases of the Save the Homes customer journey. That way we can see which tool is usable in the onboarding phase, design phase and so on. Then the name of and an explanation of what the tool does are mentioned

Next to that the parties that are involved with the tool are mentioned. First of all, who developed the tool (and is the owner), but also who is the party that uses the tool in Save the Homes, because those are not necessary the same. The matrix makes a reference to the level the tool is used at; is it for individual use (for example advice for a home), or is it on a more community level, like neighborhood, city or region (like a campaign for cooperate buy in). A last reference that was put in the matrix is a reference to the paper written by Milin and Bullier, regarding tot the type of One Stop Shop it is. Is it an Advice, Support or Implementation orientated OSS? During the Save the home project we saw that these three types have different approaches and different results.

We also saw that both, Valencia and Rotterdam, follow a different path. Where Valencia follows a more top-down approach and thus is more an advice model, Rotterdam uses a bottom up approach, where advice and support are both used. Both cities did not reach the execution level enough to be an implementation model.

Figure 2: three different models for a One Stop Shop

With this matrix it is possible to choose the instruments that are already in place. Especially when replication in other cities is the task, that city can pick whatever tool they need. Given the context of the city they can choose what is necessary.

That is also the reason that tools that are available in the follower cities, Ljubljana and San Cugat are incorporated in the list.

3 Matrix

	city	phase	tool	explanation	used by	scale	best fitting model * (Millin /Bullier)	developed by
1	Rotterdam	0. Onboarding	Local actions	Heat scan, information session	Alex Energy	individual	advice	Alex Energy
2	Rotterdam	0. Onboarding	Community meeting	Local community meetings to inform people, aimed at neighborhood level	Alex Energy	neigborhood	advice	Alex Energy
3	Rotterdam	0. Onboarding	Brochures	Information about specific measures (like PV or cavity insulation)	Alex Energy	neigborhood	advice	BouwhulpGroep
4	Rotterdam	0. Onboarding	Data	Information about specific types of dwellings	Alex Energy	neigborhood	support	BouwhulpGroep
5	Rotterdam	0. Onboarding	Ikwoon	webapplication, facilitated by the municiaplity to show people what the possibility of a home is, to help citizens that are unaware to get an idea of renovating. (www.ikwoon.io)	City of Rotterdam	city	advice	BouwhulpGroep
6	Rotterdam	0. Onboarding	Local actions	Heat scan, information session, pop up store	City of Rotterdam	neigborhood	advice	City of Rotterdam
7	Rotterdam	0. Onboarding	Brochures	Information about specific topics (Energy reduction, insultaion, districit heating)	City of Rotterdam	complex	advice	City of Rotterdam
8	Valencia	0. Onboarding	Xarxa XALOC	XALOC is a network of collaborating organizations with the Generalitat Valenciana to provide all individuals in the Valencian Community with a comprehensive service for management, information, social mediation, and advice on housing matters, building rehabilitation, and urban regeneration.	Citizens	region	support	IVE
9	Valencia	0. Onboarding	RenovEU website	RenovEU provides information to citizens about grants for improving the energy performance of buildings or dwellings.	Citizens	region	advice	IVE
10	Valencia	0. Onboarding	Workshops	A web platform that enables users to explore and register for a variety of workshops offered by the Office of Energy, available in both online and in-person formats, aimed at the general public. The goal is to promote a fair energy transition and enhance the quality of life for individuals through formation and counseling.	Citizens	region	advice	Valencia Clima i Energia (VCE)
11	Valencia	0. Onboarding	Summary of available grants and subsidies	The Office of Energy provides a space for promoting energy conservation and home rehabilitation. They offer advice to citizens on the various financial aids available to promote energy savings and equitable access to energy.	Citizens	region	advice	Valencia Clima i Energia (VCE)
12	Valencia	0. Onboarding	Guide for domestic energy savings	The document outlines 15 measures to promote energy savings in households. It serves as a citizen's guide for the energy rehabilitation of homes, providing a roadmap of more efficient actions to achieve greater energy savings.	Citizens	individual	advice	Valencia Clima i Energia (VCE)
13	Valencia	0. Onboarding	Appointment at the Offices of Energy	The Energy Office is a one-stop shop to the energy transition in the city of Valencia, a space for information and education aimed at the public, providing personalized advice, workshops, and energy-related activities.	Citizens	individual	support	Valencia Clima i Energia (VCE)
14	Valencia	0. Onboarding	Success stories map	Visualization through maps of the best practices in energy rehabilitation, including information about the building, the renovation process, comfort and energy savings data, as well as real-life experiences. One goal is to encourage and advise citizens in implementing energy retrofitting practices in their homes.	Citizens	individual	advice	IVE
15	Valencia	0. Onboarding	Success stories map	Visualization through maps of the best practices in energy rehabilitation, including information about the building, the renovation process, comfort and energy savings data, as well as real-life experiences. The building profiles can serve as references for experts in energy renovation best practices.	Experts	region	advice	IVE

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city	phase	tool	explanation	used by	scale	best fitting model * (Millin /Bullier)	developed by
16 Valencia	0. Onboarding	Citizen School of Energy Rehabilitation	Within the framework of energy rehabilitation processes, the Citizen School's goal is to vindicate and raise awareness among the entire community about the Right to Energy and energy retrofitting. This is accomplished through various activities aimed at generating awareness among the public and providing them with the necessary information to undertake a renovation process.	Citizens	region	advice	Valencia Clima i Energia (VCE)
17 San Cugat	0. Onboarding	Open workshops and local heroes	Different workshops and citizen open meetings in public buildings	Citizens	neigborhood	advice	Sant Cugat Municipality
18 Rotterdam	1. Design	Energy coach	Advise for people willing to renovate on what to do, from an energy coach from Alex Energy	Alex Energy	neigborhood	advice	Alex Energy
19 Rotterdam	1. Design	(Buurmensen) Ambassador	Grouping into a community. One or two people in an area of the neigborhood are frotnrunner and will activate other people. Because these people live together, it is easier to connect.	Alex Energy	neigborhood	support	Alex Energy
20 Rotterdam	1. Design	Neighborhood analysis	Analysis of the area, translation hopusing stock into components with a certain degree of repetition. Making maps to help identify differnte typology	City of Rotterdam	district	support	BouwhulpGroep
21 Rotterdam	1. Design	Neighborhood analysis	calculations on large scale actions in the city (EUCF) based on neighborhood simulation model	BouwhulpGroep	complex	support	BouwhulpGroep
22 Rotterdam	1. Design	Ikwoon	webapplication to help citizens that are aware tot find solutions that will suit their home (www.ikwoon.io)	citizens	individual	support	BouwhulpGroep
23 Rotterdam	1. Design	Projectmanagement/ Quality control	Guidance in advance for quality control, on execution, planning and quality	Community	complex	support	BouwhulpGroep
24 Rotterdam	1. Design	Awareness	The city of Rotteram is executing a nation program (NIP) with the use of a tool called 'Verbeterjehuis'. (https://www.verbeterjehuis.nl/)	City of Rotterdam	city	advice	City of Rotterdam
25 Valencia	1. Design	RenovEU	RenovEU is a web-based tool to estimate the energy consumption of a building, offering different options for energy retrofit and increased comfort, in compliance with the requirements for obtaining financial assistance through the European Union's Next Generation plan.	Citizens	region	support	IVE
26 Valencia	1. Design	RenovEU	RenovEU is a web-based tool to estimate the energy consumption of a building, offering different options for energy retrofit and increased comfort, in compliance with the requirements for obtaining financial assistance through the European Union's Next Generation plan. Rehabilitation/agents can download data and results files and modify parameters, such as the climate zone.	Experts	region	support	IVE
27 Valencia	1. Design	RenovEU	RenovEU is a web-based tool to estimate the energy consumption of a building, offering different options for energy retrofit and increased comfort, in compliance with the requirements for obtaining financial assistance through the European Union's Next Generation plan. Rehabilitation/agents can download data and results files and modify parameters, such as the climate zone.	Staff	region	support	IVE

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	city	phase	tool	explanation	used by	scale	best fitting model * (Millin /Bullier)	developed by
28	Valencia	1. Design	Aids compatibility calculator	Calculation tool designed for both experts and staff to access information about available grants, estimate amounts, and check their compatibility, aimed at energy rehabilitation projects in buildings and dwellings. The tool compiles the existing grants at both the state and local levels in the Valencian Communit.	Experts	individual	support	IVE + VCE
29	Valencia	1. Design	Aids compatibility calculator	Calculation tool designed for both experts and staff to access information about available grants, estimate amounts, and check their compatibility, aimed at energy rehabilitation projects in buildings and dwellings. The tool compiles the existing grants at both the state and local levels in the Valencian Communit.	Staff	individual	support	IVE + VCE
30	Valencia	1. Design	Citizen School of Energy Rehabilitation	Within the framework of energy rehabilitation processes, the Citizen School's goal is to vindicate and raise awareness among the entire community about the Right to Energy and energy retrofitting. This is achieved through various activities that enable citizens to select and formalize optimal energy rehabilitation solutions.	Citizens	region	advice	Valencia Clima i Energia (VCE)
31	San Cugat	1. Design	La Teulada new energy office	New energy local office to advise people willing to installa solar FV o re	Citizens	neigborhood	advice	Sant Cugat Municipality
32	Ljubljana	1. Design	Energy advisor	Advise people willing to renovate on specific topics, from an energy adv	Ensvet	individual	advice	EKO Fund
33	Ljubljana	1. Design	subsidy, loan	subsidies and credits for the implementation of energy renovation mea:	Eko Fund	individual	support	EKO Fund
34	Valencia	1. Design	Loan checker	Tool to calculate the impact of a loan, necessary for the sustaianbale measures.	Citizens	individual	advice	GNE
35	Rotterdam	1. Design	Energie Transitie Fonds	Tool to calculate and apply for a loan that is part of the Energy Transition Fund. https://duurzaam010.nl/subsidie_thema/energietransitiefonds/	Citizens	individual	support	City of Rotterdam
36	Rotterdam	2. Elaboration	Collective purchase	Collective purchase of Solar panels, by Alex. They have two kind of solutions, buying them for your own home. And also the possibility to buy shares in a collective project on roofs of (for example) a (community) sports building.	Alex Energy	neigborhood	support	Alex Energy
37	Rotterdam	2. Elaboration	Home assessment	When people are aware that they want something done, but not quite sure what, a home assessment is possible. This can be done by the energy coaches of Alex Energy. It is mainly to get an insight on the possibilties, and not (yet) the exact workout of the details.	citizens	individual	advice	Alex Energy
38	Rotterdam	2. Elaboration	Leaflet	Renovation solutions that are fit for a certain component are worked out to a level that can be used in a quotation. This leaflet can be uploaded in Ikwoon.	Community	country	implementation	BouwhulpGroep
39	Rotterdam	2. Elaboration	Menu	Choices of integral solutions, where the leaflets are made available. This menu structure also exisits in Ikwoon, so it is a logiacl follow up for peopel that already used it.	Community	city	support	BouwhulpGroep
40	Rotterdam	2. Elaboration	Home assessment	To prepare for the defintie choices, a home assesment is done. This can be done by someone from Alex Energy, or (based on the leaflets) by a contractor. Ideally this is done by an independent person, for example emplouyed by the HUB. In the pilot this was doen by the frontrunners of the community, and BouwhulpGroep.	Community	complex	support	BouwhulpGroep
41	Rotterdam	2. Elaboration	reference buildings	9 archetypes of buildings, worked out in energy reduction. For each refernece type detailled energy calcualtions, based on EPBD regulations have been made, including the effet of solutions.	City of Rotterdam	city	support	BouwhulpGroep

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city	phase	tool	explanation	used by	scale	best fitting model * (Millin /Bullier)	developed by
42 Rotterdam	2. Elaboration	defining quotation	defining together with the citizens in the community the quotation and measures	Community	complex	implementation	BouwhulpGroep
43 Rotterdam	2. Elaboration	setting quotations and evaluating quotations	process of setting the quotation into the market and evaluating the results, based on MIAR -principles (Method for Innovative Quotations and realisation)	Community	complex	implementation	BouwhulpGroep
44 Rotterdam	2. Elaboration	Energy advisor	Advise people willing to renovate on specific topics, froma an energy adviser of the municiplaity	City of Rotterdam	individual	advice	City of Rotterdam
45 Rotterdam	2. Elaboration	ambassador	people that already are active communicating with others	Community	neigborhood	advice	City of Rotterdam
46 Rotterdam	2. Elaboration	contractor list	list of potential contractors that can perform renovation tasks. This list was not validated with field research, but sloley based on registraions in the chamber of commerce and the indication of labour code.	City of Rotterdam	city	support	City of Rotterdam
47 Rotterdam	2. Elaboration	Projectmanagement/ Quality control	Guidance during execution, on execution, planning and quality	Community	complex	implementation	BouwhulpGroep
48 Valencia	2. Elaboration	Rehabilitation manager/agent training	Training within the regulatory framework of the Next Generation funds to promote rehabilitation actions through the education of specialized professionals. The goals are to present the current regulatory framework, define the role of rehabilitation managers/agents, their functions and responsibilities, provide information on applicable tax incentives, and share previous experiences in the comprehensive management of rehabilitation projects.	Experts	region	support	IVE
49 Valencia	2. Elaboration	XALOC training	Training aimed at the members of the Xaloc network to provide citizens with a comprehensive service through a one-stop shop, including information, social mediation, and advice on housing, building rehabilitation, and urban regeneration.	Staff	region	support	IVE
50 Valencia	2. Elaboration	CHC Register	The Registry for Quality in the Built Environment is a general information tool about professionals, products, or examples of best practices in the field of construction.	Citizens	region	support	IVE
51 Valencia	2. Elaboration	Citizen School of Energy Rehabilitation	Within the framework of energy rehabilitation processes, the Citizen School's goal is to vindicate and raise awareness among the entire community about the Right to Energy and energy retrofitting. This is carried out through various activities that enable mediation, assessment, and training for behavioral change.	Citizens	region	support	Valencia Clima i Energia (VCE)
52 San Cugat	2. Elaboration	Tax reduction by municipality web	The city of Sant Cugat is executing a local plan of tax reduction when im	Citizens	city	implementation	Sant Cugat Municipality
53 Valencia	2. Elaboration	loan-tool	tool to explore the possibilities for a loan and the anual/monthly amou	Citizens	individual	advice	GNE
54 Rotterdam	3. Construction	Projectmanagement/ Quality control	Guidance during execution, on execution, planning and quality	Community	complex	implementation	BouwhulpGroep
55 Rotterdam	3. Construction	Building management	In case of the pilot, there was not one contractor. An extra manager was in place to coordinate all individual steps and measures, performed by self employed workers.	Community	complex	implementation	Community
56 Rotterdam	3. Construction	community newsletter	newsletters to inform the participating citizens in the pilot of the progress	Community	complex	advice	Community
57 Rotterdam	3. Construction	Building collective	A colelctive of 5 self-empolyed workers, together with a supervisor, conducting all the work. This is an alternative for one contractor doing all the work.	Community	complex	implementation	BouwhulpGroep
58 Valencia	3. Construction	XALOC forum	An online forum aimed at individuals receiving training within the Xaloc network, where users can share ideas, ask questions, discuss relevant topics, and interact with expert instructors. The purpose is to enhance the Xaloc One-Stop-Shop and build a network of contacts in a collaborative learning environment.	Staff	individual	support	IVE

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	city	phase	tool	explanation	used by	scale	best fitting model * (Millin /Bullier)	developed by
59	Valencia	3. Construction	Rehabilitation manager/agent forum	An online forum aimed at individuals interested in obtaining accreditation as rehabilitation managers/agents, where users can share ideas, ask questions, discuss relevant topics, and interact with expert instructors. The aim is to drive rehabilitation activities and establish a network of contacts within a collaborative learning environment.	Experts	individual	support	IVE
60	Valencia	3. Construction	Citizen School of Energy Rehabilitation	Within the framework of energy rehabilitation processes, the Citizen School's goal is to vindicate and raise awareness among the entire community about the Right to Energy and energy retrofitting. This stage of the retrofitting process involves activities like training, mediation and assessment support.	Citizens	region	support	Valencia Clima i Energia (VCE)
61	Valencia	4. In-use	Workshops	A web platform that enables users to explore and register for a variety of workshops offered by the Office of Energy, available in both online and in-person formats, aimed at the general public. The goal is to promote a fair energy transition and enhance the quality of life for individuals through success stories in retrofitting.	Citizens	individual	advice	Valencia Clima i Energia (VCE)
62	Valencia	4. In-use	Energy self-diagnosis kit	The Energy Office of VCE offers the possibility to rent a kit for homeown	Citizens	individual	implementation	Valencia Clima i Energia (VCE)
63	Valencia	4. In-use	Success stories map	Visualization through maps of the best practices in energy rehabilitation, including information about the building, the renovation process, comfort and energy savings data, as well as experiences. Citizens can use the platform as a reference and validation tool for the renovation process carried out, to compare with other similar projects, and as a source of inspiration for other energy renovation initiatives.	Citizens	region	implementation	IVE
64	Valencia	4. In-use	Success stories map	Visualization through maps of the best practices in energy rehabilitation, including information about the building, the renovation process, comfort and energy savings data, as well as experiences. Experts will be able to share their own experiences of renovation processes, serving as a tool for the assessment and verification of the measures taken, a dossier containing documentation and success stories, as well as serving as an example of best practices for other experts and citizens.	Experts	region	implementation	IVE
65	Valencia	4. In-use	Citizen School of Energy Rehabilitation	Within the framework of energy rehabilitation processes, the Citizen School's goal is to vindicate and raise awareness among the entire community about the Right to Energy and energy retrofitting. This is carried out through guidance, workshops, group meetings, talks, and activities that promote feedback and the dissemination of success stories in energy regeneration processes.	Citizens	region	advice	Valencia Clima i Energia (VCE)
66	San Cugat	4. In-use	RenovEU	This allows you to approximately calculate the energy consumption of y	Citizens	individual	support	IVE

4 Conclusion

Save the Homes is a display of current knowledge on how to stimulate sustainable renovations in a city or region. This asks for a point of contact, where citizens can come to and get information on what to do. A One Stop Shop can be such a point. And a HUB is also such a point where information can be gathered. However, it is not defined that this point of contact must be a physical place. In D4.5 the distinction between a physical place and a digital place is also made. With this matrix all instruments used in the project are gathered. Some of them are digital, some of them can be used in physical meetings. The maturity of these instruments varies between ideas and fully matured tools. In the future these instruments can be made available in a web-based information system. But only if the added value of incorporating them into one tool is clear. For now, organizing a HUB or an OSS should have priority above creating a web-based system that can be used by a HUB or a OSS.