# D6.5: Report on community participation and playground results

+CityxChange | Work Package 6, Task 6.3

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# Table of Contents

# List of Acronyms

| | |
|---|---|
| **BCV** | Bold City Vision |
| **CO** | Citizen Observatory |
| **COL** | Colaborativa |
| **CSOs** | Civil Society Organisations |
| **DA** | Demonstration Area |
| **DPEB** | Distributed Positive Energy Block |
| **DST** | Decision Support Tool |
| **FC** | Follower City |
| **IP** | Innovation Playground |
| **LEM** | Local Energy Market |
| **LHC** | Lighthouse City |
| **OV** | Officinae Verdi |
| **PEB** | Positive Energy Block |
| **PED** | Positive Energy District |
| **+CxC** | CityxChange |
| **SDGs** | Sustainable Development Goals |
| **SE** | Space Engagers |
| **SMEs** | Small and Medium Enterprises |
| **WP3** | Work Package 3 |

# Executive Summary

One of the core objectives of the +CityxChange project is to activate local stakeholder knowledge and resources towards the creation of Distributed Positive Energy Blocks (DPEBs) and the broader market in all five Follower cities: Alba Iulia, Písek, Sestao, Smolyan and Võru. The focus of this Report is on describing the activities that have ensured replication of the Demonstration Projects that have been carried out in the Lighthouse cities in this regard. This includes implemented citizen and stakeholder engagement measures, innovation playgrounds, and development of business and investment models.

CommunityxChange principles are expressed in six Frameworks. The Bold City Vision is a Framework that helps cities identify and address key opportunities and actions on their way towards becoming smarter and more sustainable. A Citizen Participation Playbook is a catalogue of practices to empower communities to contribute to the Positive Energy transition. A Learning Framework for Next Generation Smart Citizens is an infrastructure for intergenerational learning initiatives and learning events with youth participation in Distributed Positive Energy Blocks (DPEBs) at its core. A Framework for Positive Energy Champions supports a network of individuals who foster positive energy communities by incorporating positive energy concepts into their daily routines and help their fellow citizens to do so too. A Framework for Innovation Labs supports the implementation of dedicated centres for digital innovation within a city, and enhancement of existing centres, where they exist. As described in D3.6, Framework for DPEB Innovation Labs, (p 8): "It comprises a Programme and virtual and physical locations, or a network of locations, where implementation of the +CityxChange Innovation Playground can become manifest" with objectives to :

- “Initiate new collaborative operating structures.
- Cultivate an Open Innovation 2.0 ecosystem for entrepreneurs and start-ups.
- Support competition and innovation in the creation and replication of DPEBs.
- Enable a permeable culture of collaboration and co-creation in the city"

and includes orchestration of the Innovation Playground. The Framework for Innovation Playgrounds supports the development of an area of a city where different virtual and physical places and activities related to innovation are brought together into a coherent whole to facilitate collaboration, empower citizens, and find new ways of addressing challenges that matter to people.

These Frameworks, as well as learnings from the application and adaptation of the frameworks in the LHCs, were used in a targeted way towards the implementation of PEBs and the related transition processes with citizens and other stakeholders, and this Report describes how that implementation happened in Alba Iulia, Písek, Sestao, Smolyan and Võru. The Report begins in each city by reporting on community participation, within the broader CommunityxChange approach, and then moves to considering the implementation of the Framework for Innovation Playgrounds locally in the five distinct cities. Implemented Business and Investment models are reported for all five cities.

In describing the overall application of CommunityxChange principles, as set out in CommunityxChange results, it is intended that this Report could be used by other cities in a targeted way towards the implementation of PEBs and the related transition processes with citizens and other stakeholders. Results of community participation and engagement in implementing Bold City Vision, Citizen participation platforms, Learning Framework for Next Generation Smart Citizens, Framework for Positive Energy Champions and Framework for Innovation Labs demonstrate the level and quality of engagement and participation in each city. Description of implementation of Innovation Playgrounds in five Follower Cities, and testing of business and investment models, also records the spatial and socio-economic framework developed for each city in the period from April 2020 to April 2023.

# 1 Introduction

This Report on community participation and Innovation Playground results describes the response to the main objective of the CommunityxChange Task (T6.3) of the Follower Cities. The overall aim of the report is to describe all relevant community participation and citizen engagement measures undertaken in order to promote development of DPEBs in FCs, describe implementation of innovation playgrounds, and relate these to enactment of business and Investment models in five Follower Cities. Business and Investment models means a series of actions, tools and elements that measure, assess and give guidance on the +CxC project's possible success and failure in terms of economic, financial and social factors and indicators. Community participation and involvement means meaningful citizen engagement in any city making process led by public institutions, while Innovation Playground results in five Follower Cities record the spatial and socio-economic framework developed for each city in the implementation period of the project.
Results and experience of +CityxChange demonstration projects in LHs and FCs will include several benefits of Community participation in terms of potential financial and funding benefits from the EU instruments as the ERDF (European Regional Development Fund) and Cohesion Fund, and Resilience facility to finance RES and EE projects (for details check paragraph of this Deliverable

The background of this Deliverable includes the previous implementation of the relevant Frameworks in the two Lighthouse cities. The related previous Deliverables, including six framework documents (named 'CommunityxChange') also include the Reports which emerged from the implementation in Limerick (D4.3, Limerick Innovation Lab Solutions Catalogue 1, D4.8, Limerick Citizen Observatory, and D4.10, Limerick Innovation Lab Solutions Catalogue 2) and Trondheim (D5.8, +Trondheim Citizen Observatory, and D5.10, Trondheim Innovation Lab Solutions Catalogue).

The specific project context varied widely in the five Follower Cities, in geography, climate, population size and culture. All Follower Cities were affected by the onset of Covid 19, especially from February 2020 to early 2022. The emerging energy crisis from February 2022 brought new attention to the topics of the project, increasing perceived relevance for stakeholders and citizens. The project and Task aims included localisation of the +CxC frameworks in order to progress PEBS in each city and contribute to the wider energy transition, and the approach followed general +CxC principles of Open Innovation 2.0 ecosystems collaboration across all project partners, municipal authorities, energy providers, businesses, citizens, and communities. D9.1, Framework for intra-project collaboration, a learning framework, based on open innovation, (which promotes fostering a collaborative approach among +CityxChange partners and with external stakeholders), and D3.6, Framework for DPEB Innovation Labs, (mentioned above) were integral to the overall collaboration, co-design and cooperation across stakeholders, citizens and institutions.

## 1.1 Project Requirements

The T6.3 Task description from the GA is as follows:

> 'To support the acceleration of becoming a positive energy city, each FC will connect to the +CityxChange portfolio of community collaboration and co-creation measures to promote the development of DPEBs, including innovation playgrounds (T3.5) and labs (T3.5), citizen participation platforms (T3.2), Positive Energy Champions (T3.4), and activities targeting youth (T3.3).
>
> The task will activate local stakeholder knowledge and resources and contribute to transform the FC Bold City Vision (T3.1) into practice. Using the Innovation Playground framework developed in T3.6 and the LHC experiences in T4.5/5.5 as a basis, this task will develop a spatial and socio-economic framework for each FC, in which municipal authorities, energy providers, businesses, citizens, and communities can connect with each other, ideate, develop and test urban prototypes and beta projects, get help to nurture their ideas into maturity through crowd-solving, crowd-funding and match-funding, and receive mentoring to develop business models to bring their ideas towards the creation of DPEBs and the broader market. The task will give room to local initiatives through open calendars defined by the local communities building on existing formats such as local festivals, city engagement weeks, hackathons, and youth energy-related programmes (See section 1.3.3.3). The first steps will involve adaptation to local conditions, including developing a brief; examining precedents; identifying user personas - focus on understanding users; identifying supports. The entire communication of observations, ideas and projects will be spatial, i.e. everything will be organised through a map of the city/district, using interactive mapping to engage citizens with their place and local issues.
>
> Participant Roles: SE will lead, adapt the Innovation playground framework to local FC conditions and support its deployment in each FC. The FCs will promote and support activities across the city. COL will contribute as task leads of T3.2. OV will advise and support deployment of funding frameworks for the playgrounds, and ensure integration with T6.5."

The D6.5 Deliverable 'Report on community participation and playground results' description reads as follows:

> This deliverable describes the activation of local stakeholder knowledge and resources and contribute to transform all five Follower City Bold City Visions into practice. Using the Innovation Playground framework developed in T3.5 and the LHC experiences in T4.5/5.5 as a basis, this report defines a spatial and socio-economic framework for each FC, in which municipal authorities, energy providers, businesses, citizens, and communities can connect with each other, ideate, develop and test urban prototypes and beta projects, get help to nurture their ideas into maturity through crowd-solving, crowd-funding and match-funding, and receive mentoring to

develop business models to bring their ideas towards the creation of Distributed Positive Energy Blocks and the broader market.
The steps include:
1) adaptation to local conditions, including developing a brief;
2) examining precedents;
3) identifying user personas - focus on understanding users; and
4) identifying supports.
The communication of observations, ideas and projects will be spatially organised through a map of the city/district, using interactive mapping to engage citizens with their place and local issues (connected to Task 6.3).

## 1.2 Connections to other Deliverables

One aim of CommunityxChange is to create a framework for participatory design and collaboration and co-creation that will enable citizens, businesses and agencies in Demonstration Districts to develop the sense of ownership that is critical for managing the change towards living and doing business in a positive energy city. Application of CommunityxChange involves adopting, adapting, localising, synthesising and coordinating knowledge generated and insights gained from relevant research, work packages, Deliverables, Framework documents, and the Lighthouse cities implementation.

Six Deliverables are especially connected to community collaboration and co-creation measures to promote the development of DPEBs. The main WP3 Deliverable connected to the community participation and engagement aspects of this Report is D3.2, Development of Citizen Participation Playbook and Platform (2020). This deliverable includes a step-by-step reference guide for local authorities to run community collaboration and co-creation activities to co-design PEBs and PEDs. The Playbook is based on best practices for effective citizen participation obtained from analysing previous experiences on citizen participation by smart city projects, together with the insights of LHCs and FCs on citizen participation through collaborative sessions, questionnaires and interviews. D3.2 includes a set of online and physical tools providing an integrated and synchronised approach to citizen participation, with the ability to adapt to the great diversity of FCs participants in the +CityxChange project. A set of recommendations are also included in D3.2 for each FC to be applied when developing community collaboration and co-creation activities and open calendars. These recommendations define the foundations together with best practices and the citizen participation playbook and platform in order to achieve effective and inclusive citizen engagement when performing community collaboration and co-creation activities and open calendars to promote development of DPEBs.

Other relevant WP3 Deliverables are: D3.4: Framework for DPEB Learning and Education (2020) D3.5: Framework for a Positive Energy Champion Network (2020) D3.6 Framework for DPEB Innovation Labs (2020). The Framework for DPEB Innovation Labs is particularly relevant. It defines a +CityxChange DPEB Innovation Lab as a dedicated centre for digital innovation within a city, focused on the creation and replication of DPEBs. It comprises a Programme, and virtual and physical locations, or network of locations, where implementation of the +CityxChange Innovation Playground can become manifest.

Certain concepts and language which are considered integral to Open Innovation 2.0, an important principle in the +CxC Project, are described in D3.6 (Pg 20), and four of these in particular influenced the work of collaboration, co-design and cooperation across stakeholders, citizens and institutions in Follower Cities in the achievement of this CommunityxChange Task.

The first relevant concept described in D3.6 is 'Shared Value' - described as 'the idea that value creation by business, a better quality of life for citizens and improved environmental quality are inherently connected and when achieved, can significantly enhance future prosperity'. The second relevant concept described in D3.6 is 'Quadruple Helix' – described as 'a model of innovation where diverse stakeholders including business, academia, civil society and government collaborate to achieve more together than is possible on their own'. The third relevant concept described in D3.6 is 'Innovation ecosystem' - described as 'where quadruple helix stakeholders interact and participate in experimentation and collaboration and co-creation to form an open, adaptive, learning-driven knowledge and innovation ecosystem'. The fourth relevant concept described in D3.6 is 'Orchestration' – The deliberate design and facilitation of interactions between quadruple helix stakeholders, processes of experimentation, and processes of collaboration and co-creation to initiate and to sustain an Open Innovation 2.0 ecosystem'. Some of these concepts are also introduced in D9.1 "Framework for intra-project collaboration", which also lists relevant literature.

Five Follower City 2050 Bold City Vision and Guidelines reports (as part of Deliverable D6.2 "Bold City Vision 2050 for each FC"), document what each Follower City intends to do to enable the creation of a Positive Energy City by 2050.

The principal framework and background connected to the business and investment models in terms of approach and methodology is D2.4 "Report on Bankability of the Demonstrated Innovations" ; in terms of applied methodology, achieved results, progress, Business Models and Investment solutions. The other linked and connected Deliverables with tangible and demo projects containing Business and Investment models, which show community participation and involvement, are D5.16 "+Trondheim Sustainable investments and business models and concepts" and the Limerick demo case in D 4.15 "D4.15 - Limerick Energy Investment Models White Paper; this, in particular, describes the REC - Renewable Energy Community establishment and management of some energy assets and infrastructures and it's a tangible example of Community involvement and commitment. Another relevant Deliverable (to be finalised) is D6.4: "Report on Investment Pipelines and Novel Business Models for FCs".

## 1.3 Adaptations

To accommodate changing circumstances and conditions in Follower Cities, there have been some minor deviations from the +CityxChange Grant Agreement. Minor deviations included changes in relation to crowdfunding and match-funding in all five Follower Cities,

to be further discussed in the upcoming D6.4: Report on Investment Pipelines and Novel Business Models for FCs.

## 1.4 Structure of this Report

This report is structured in ten main sections. Section 1: *Introduction* sets out a concise introduction to this Deliverable. Section 2: *Context* sets out the background of the implementation results of two Lighthouse Cities, Limerick and Trondheim. Section 3: *Methodology,* describes how the eight subtasks in the Task Description became the structure for gathering information about community participation, implemented Innovation Playgrounds and business and investment models, which in turn forms the core of this Report. Sections 4 to 8 describe *Five Follower City Implementation Reports.* Section 9: *Business and Investment Models*, describes this aspect for the cities. Section 10: *Discussion* analyses key learnings from the engagement and participation activities of all urban stakeholders in cross-sectoral collaboration and innovation playground implementation across five cities. Section 11: *Conclusions*, summarises the learnings and results of the five Follower City community engagement and participation activities, implemented Innovation Playgrounds, and tested business and investment models.

# 2 Context

This section explains how the previously developed Frameworks apply in the five Follower Cities, building on the progress and implementation in Limerick and Trondheim.

## 2.1 Implementation Results of two Lighthouse Cities

Localising and adapting the spatial and socio-economic frameworks implemented in Limerick and Trondheim included learning from the Lighthouse Cities' experiences, as described in the three Deliverables mentioned above, from Limerick (D4.3, Limerick Innovation Lab Solutions Catalogue 1, D4.8: Limerick Citizen Observatory, and D4.10, Limerick Innovation Lab Solutions Catalogue 2), and Trondheim (D5.10, Trondheim Innovation Lab Solutions Catalogue).

A short account of the breadth of Innovation Playground animation carried out through T4.3 (Community-led Open Innovation in Limerick) and T4.5, (Implementation of an Innovation Playground in Limerick), described in D4.3/D4.10 and D4.8 follows. D4.3: Limerick Innovation Lab Solutions Catalogue 1 describes the establishment of an area in Limerick to enable the local authority, energy providers, businesses, citizens and communities to test and prototype innovative ideas to allow a movement towards the establishment of DPEBs (Distributed Positive Energy Blocks) in the city. Elements of the Innovation Playground framework established in Limerick included the Innovation Lab, Do-It-Together training workshops and processes to encourage citizen participation. All urban stakeholders in Limerick were involved in cross-sectoral collaboration, in a demonstration of the 'Quadruple Helix' concept in practice. Tools used throughout the implementation to animate the Innovation Playground in the city included Citizen Observatory and CityEngage Portal, Communication Tools, and Visualisation Tools, Other tools were used to develop a conducive environment for the Limerick Innovation Lab, including practical tools for fabricating RES Solutions, Workshops, Other Programmatic Elements, and installation and operation of Equipment and Lab Infrastructure. A catalogue of 'Solutions' (that is, 'measures a city implements to achieve a certain objective') in Limerick are also described in D4.3, and these in particular highlight, describe and demonstrate the work of engagement, learning and action across all urban stakeholders around the Innovation Playground implementation project in the city of Limerick.

D4.10, : Limerick Innovation Lab Solutions Catalogue 2, described the second year of implementation, when D3.6: Framework for DPEB Innovation Labs (Fitzgerald et. al, 2020) had been incorporated into Innovation Playground (IP) implementation with the objective to cultivate an open innovation ecosystem in Limerick. In addition to creating a physical space for digital innovation– the Citizen Innovation Lab – the D3.6 framework introduced key open innovation concepts to Innovation Playground implementation for the city. These included collaborative governance of the Innovation Playground; orchestration of the innovation ecosystem through an innovation agenda and a co-created programme of engagement;

positive cycles of collaboration; serendipity and network effects, demonstrating the concept of 'Shared Value' in the city.

The development and establishment of a Citizens' Observatory for Limerick, as well as the engagement programme of community participation events, and the establishment of a Positive Energy Champions Network as a means to empower citizens through community-led open innovation, is all described in D4.8. The Deliverable acts as a description and demonstration of the idea of integrated operation of numerous CommunityxChange frameworks, as observed through implementation in Limerick.

Implementation regarding community participation and engagement in Limerick has created a network of community, government, academic and business activators who have been effectively engaged through the project. The Citizen Observatory as part of the Citizen Innovation Lab has become an integral part for achieving Limerick's climate goals by 2050. The Project Tasks 'Community Led Open Innovation' and 'Development of a citizen participation Playbook and Platform' have successfully provided Limerick with the participation and innovation tools that engage citizens with data and city frameworks.

Five Citizen Observatories (COs) were implemented regarding community participation and engagement in Trondheim before the end of year two and in operation since then. Their implementation has shown the importance of working together with local stakeholders and the network approach in implementing the COs. Spaces for innovation, interactions and involvement are of great importance for achieving effective citizen participation and engagement. While Trondheim delivered four physical Innovation Playgrounds and one digital Innovation Playground, Limerick developed a Preliminary Innovation Playground as described in the relevant Deliverable (D4.10). Solutions, as a concept, were a feature of Innovation Playgrounds in both cities. Solutions were defined in LHC Trondheim as 'any measure a city implements to achieve a certain objective...categorised as solutions for municipalities, business solutions and collaboration.'

Replication activities in Lighthouse Cities included testing different mapping softwares and processes in different city contexts, 'testing the Decision Support Tool' (DST, from the IES Modelling Platform) in multiple cities to measure predicted impacts of energy generation additions, and Climathon initiatives connecting concepts of energy to place in multiple city contexts. As regards Business and Investment models as implemented, these comprise technical, economic/financial, communication/involvement activities to achieve a physical implementation compliant with sustainability that could be integrated with other innovative policies and instruments. The characteristic of the applied methodology in the LHC's is a collaboration and co-creation approach, still in progress in the two locations (see, for example, Trondheim demo case D5.16 and the Limerick demo case, as well D4.15).

# 3 Methodology

The +CityxChange frameworks were adopted, adapted and localised specifically across the five Follower Cities in three main strands: community engagement activities and culture, Innovation Playground framework implementation, and trialling of business and investment models. Through firstly reviewing the relevant Project publications, analysing site conditions, and monitoring progress in LHCs with Project Task Partners, the Follower Cities started to see implementation as a practical achievement in Limerick and Trondheim, as well as in their own cities. Technical and general discussions between Lighthouse and Follower cities showed how local implementation could vary in different cities, but have a coherent connection to the principles of PEB generation set out in the framework. In a series of shared documents, meetings, site visits and workshops it was demonstrated that the Frameworks could be implemented across all cities using tools and processes first tested in Lighthouse Cities, adapting to local conditions through collaborations and co-design with cities, stakeholders and citizens in an innovative way. D9.1, Framework for intra-project collaboration, a learning framework, based on open innovation, (which promotes fostering a collaborative approach among +CityxChange partners and with external stakeholders), formed the basis for the work method. Regular reporting across all cities ensured that learnings could be shared and recorded systematically, and showed how variations in local social, regulatory and political contexts affected the diverse outcomes and projects in Follower Cities.

The way the implementation work was adapted to suit locally into the cities was integral to the approach. For example, some Follower Cities benefited from keeping the geographical definition of the Innovation Playground in a city 'open' for a time (eg. Sestao), while others (eg. Smolyan) had local agreement early in the process that particular PEB sites would also align as the Innovation Playground. The flexibility in the methodology allowed cities to collaborate and agree principles and priorities of implementation locally, so that PEBs in each Follower City would have a distinctive character.

**How was the +CxC approach adapted and used in all 5 FCs ?**

In relation to the overall methodology of how the +CxC approach was adapted and used in all 5 FCs, a short description with examples follows on how the +CxC approach was adapted differently and used distinctly in all 5 FCs, and the flexibility of the frameworks is demonstrated. The baseline methodology included developing a brief, examining precedents, identifying and understanding users, and identifying supports, but some cities emphasised or combined parts of this methodology in a locally specific way.

**Alba Iulia methodology**

In Alba Iulia, the overall methodology of how the approach was adapted and used included developing a brief, by collecting data and opinions from the citizens through the Public Barometer platform, showing flexibility of engagement across different media. examining precedents, including researching comparisons with the operation of the DST in Limerick and Trondheim for Alba Iulia. Identifying and understanding users led to creating and promoting a Participatory budgeting project, and identifying supports for that, including responding to a funding call for the National Resilience and Recovery Plan.

**Písek methodology**

In Písek, the overall methodology of how the approach was adapted and used involved developing a brief, including a Community Energy Workshop held in May, 2021, which refined the local need. Examining precedents in Písek included researching forms of association of property owners, and how they progress photovoltaic panels on roofs. A local network was formed, as a Whatsapp group, and a mapping tool facilitated work. Identifying and understanding users involved supporting the creation of an association of property owners, photovoltaic panels on roofs  and identifying supports included working with a partner 'Water and Greenery', and local companies offering those photovoltaic services.

**Sestao methodology**

In Sestao, the overall methodology of how the approach was adapted and used included developing a brief, by firstly understanding Schools sustainability activities, and a local biomass project, Sestao Biomass Heat Network (Red de Calor) Txabarri-El Sol. identifying and understanding users, including local building owners, community stakeholders and Technology Providers.In identifying supports, including overlaps with the Sestao Urban Agenda initiative, use of sensors, data collection in schools (the schools that are in the innovation playground) and beyond supported the early stages as well.

**Smolyan methodology**

In Smolyan, the overall methodology of how the approach was adapted and used included developing a brief, including developing a participatory budgeting project, Alba Carolina Citadel, dedicated to the Innovation Center of the City. Identifying and understanding users involved including residents of the old city centre and the new city centre, three residential neighbourhoods, and potentially the Raikovo district Identifying supports, included investigating potential for new digital systems and an interactive visitors centre.

**Võru methodology**

In Võru, the overall methodology of how the approach was adapted and used included developing a local brief which could be flexible enough in a small place. Examining precedents in Limerick, for example, concluded that, in some respects, Võru is quite similar to Limerick, as both municipalities were working on 'Old Towns'. Examining precedents in Võru also included reviewing the concept of an Observatory, but concluding that a 'popup' facility, which is mobile, might suit a small Innovation Playground better. Identifying and understanding users included, for example, holding an energy event in the old town, on energy efficiency in the main square, and another about bicycle day, (on a traditional event day), (entertainment) and connected to mobility. Identifying supports in Võru included promotion of building renovation support schemes locally.

The development of community collaboration and co-creation measures in each FC to promote the development of DPEBs is based on several deliverables in WP3. The recommendations included in 'D3.2 Delivery of the citizen participation playbook' were the starting point for developing/deploying together with each FC the most suitable participation tools (physical and online) in their respective communities. The approach takes into account the best practices in citizen engagement, also stated in D3.2, to achieve effective and inclusive citizen participation processes. Additionally, there are three deliverables in WP3 which were important when defining the methodology: these are 'D3.5 : Framework for a Positive Energy Champion network', 'D3.6 : Framework for DPEB Innovation Labs' and 'D3.4 : Framework for DPEB learning and education'. All of them together will contribute to transform the FC Bold City Vision into practice.

As regards methodology, the work of the Task was categorised into a number of subtasks, and different Task Partners concentrated on particular areas, with all Follower Cities involved in carrying out public meetings, engagement, policy development, research and

communication locally related to all subtasks, ultimately working towards the delivery of PEBs locally. The subtasks were:

- Community collaboration and co-creation measures
- CommunityxChange and innovation playgrounds
- Bold City Vision and innovation playgrounds (overlaps)
- The development of a spatial and socio-economic framework
- Business and investment models of an innovation playground
- Open calendars
- Steps to support the acceleration
- Localisation and interactive mapping

Integration of all of the parts of the Task into a PEB as a methodology involved close interaction between lead Task partners, municipalities and citizens, focusing work on community participation, local knowledge in response to Frameworks, and local iterations of business and investment models. CommunityxChange activities related to community participation and engagement were organised under the 'Community collaboration and co-creation measures' subtask, so that all citizen activities, events, calendars etc were centrally monitored over the course of the Task. Local knowledge in response to Frameworks included local Climathons, public events and collaborative mappings about relevant energy related issues in each city, while local iterations of business and investment models included meetings and discussions on energy related grants, incentives and local enterprise. Each initiative was considered in the context of the overall goal of establishing PEBs locally.

Reporting on implementation results of an Innovation Playground in a +CityxChange city follows the same format in all seven cities, so that all +CityxChange cities can be considered together, and in relation to the common Framework document (D3.3) which was prepared in April 2020 to define the concept of Innovation Playgrounds for energy transition in a city. Following this reporting format guided implementation in the period April 2020 – December 2022 (33 months in total). The implementation results of an implemented Innovation Playground can be categorised into achievement of aims in relation to four aspects: Purpose, Outputs, Outcomes and Performance of each implemented Innovation Playground. Each of these aspects will be described below for each Follower City.

The approach was developed by undertaking regular Task Partner meetings and discussions, and agreement on allocation of pieces of work which would describe and monitor the implementation in a systematic way. Monitoring included cloud based Surveys, questionnaires, forms and communications which responded to three main strands: community engagement activities and culture, Innovation Playground framework implementation, and trialling of business and investment models.

As regards how the work of five FCs in the three strands mentioned above scales or replicates, particular lessons from distinct cities are not easy to generalise, but key lessons from each city are set out in detail in later Sections.

As regards limitations of work across the three strands mentioned above, these are connected to the particulars of each approach, but in general it can be said that the pandemic limited many activities across the five cities, and certain other limitations related to local (or national) administration, culture, language or citizen engagement as set out in the Section on each city below.

## 3.1 Community collaboration and co-creation measures and open calendars

An approach has been developed and applied for supporting effective community collaboration and co-creation measures and open calendars to promote development of DPEBs in each FC. The approach is based on the recommendations defined in section 6.2 of 'D3.2 Delivery of the citizen participation playbook'; these recommendations were developed together with each city and define the basis for starting testing the most suitable participation tools (physical and online) in their respective communities. The recommendations were divided into four groups: community, participatory processes, participatory platform, communication and accountability.
In addition, the approach takes into account the best practices in citizen engagement, also outlined in D3.2, to achieve effective and inclusive citizen participation processes, such as: define the community, clear purpose and front-loading, continuous engagement, open process, open data and open source, co-design, co-create and co-produce, and privacy by design.
There are also three deliverables in WP3 which are the base for the development of community collaboration and co-creation measures and open calendars to promote development of DPEBs, and were considered in this approach. These are 'D3.5 : Framework for a Positive Energy Champion network', 'D3.6 : Framework for DPEB Innovation Labs' and 'D3.4 : Framework for DPEB learning and education'.
Next, how the approach was applied is described. COL began collecting and analysing the citizen engagement information for each FC regarding:

- Recommendations and best practices for community engagement from D3.2
- The citizen participation playbook from D3.2
- The activities included into D3.4 to promote learning activities, in particular integrating youth learning programmes at different age levels
- The activities included into D3.5 to promote early engagement
- The framework defined in D3.6 to ensure Innovation Labs are integrated with the community collaboration and co-creation measures and open calendars. The Innovation Lab in D3.6 describes how the programme is co-created. It has an orchestration role in the Innovation Playground.

After that COL prepared a series of working sessions which were celebrated with each FC individually. In these sessions COL provided support in designing the community collaboration and co-creation activities and open calendars, encouraging them to connect with the appropriate partners regarding the related deliverables in WP3 (D3.5, D3.6 and D3.4). In particular COL analysed existing open calendars solutions being available in each FC and recommended the most appropriate to be used when performing the community collaboration and co-creation activities to promote development of DPEBs, incorporating concepts of 'Open Innovation 2.0', and 'Quadruple Helix' as described above.

The design and preparation of a Template regarding community collaboration and co-creation measures and open calendars was performed in order to collect information from FC such as: open calendars, community participation platform, involved stakeholders, activities completed successfully, challenges faced, links to evidence, key insights, key solutions and how the insights impact the solutions. With all this valuable information, conclusions and recommendations are drawn. Sections 4-8 of this document includes the results of applying this approach for each FC.

## 3.2 CommunityxChange and innovation playgrounds

The Framework for Innovation Playgrounds sets out a methodology for the implementation, monitoring and reporting on the setting up of areas of the city which focus on innovation. Different partners interpreted this Framework in different ways, with Trondheim, for example, implementing multiple Innovation Playgrounds, all having distinct characteristics, within one city. Each of the five Follower Cities created spaces in their cities which reflected local characteristics and/or cultures of energy and engagement, as well as citizens and other stakeholder involvement. The approach to localisation was developed through regular implementation and monitoring meetings with all cities, in order that each could observe and learn from comparable initiatives. The work was done by cities through informal communication with city administration, citizens and other stakeholders and meetings, funding initiatives and activities open to the public. The work reported here could scale and replicate for other cities, by following methods described principally in the two relevant Framework documents (D3.1, D3.3), and then following the lessons learned, successes and limitations of implementing in Lighthouse (see separate Deliverables) and Follower Cities. The limitations of the implementation of the Frameworks are described broadly as related to organisational capacity, funding, unforeseen events, and potential for low public engagement.

## 3.3 Bold city vision and innovation playgrounds

The Bold City Vision (BCV) Framework (D3.1) aims to assist cities in addressing and identifying key challenges, opportunities and actions on their trajectory toward becoming more sustainable and smart. The relevant Deliverable, D6.2 - 'Bold City Vision 2050 for each FC' (2023) describes the vision for the five Follower Cities, and some outcomes. For example, as an activity, the Bold City Vision process enables feasible climate-neutrality strategies to be integrated into urban planning processes. The Bold City Vision has also been reported to aid in the navigation of political processes, in the creation of long-term outlooks for energy neutrality. The process of constructing Bold City Visions was also reported in the Deliverable to help decision-makers consider scale in the design of visions and strategies. The Bold City Vision process also helped to lend material strategy to physical applications of the +CityxChange project.

The BCV framework positions the ambition of creating Energy Positive Cities within related city vision and sustainable development goals, embedding these in city planning and management processes. The documents cover cross-cutting topics such as social, financial,

technical and urban aspects that focus on smart energy and sustainable development as well as linking it to overall European Strategies and UN Sustainable Development Goals.

In this view, the initiation of BCV Framework and the Innovation Playground share common characteristics, and are in principle intertwined. The two frameworks focus on the aspect of smart city, positive energy and sustainable development within cities. However, it is in the form they take that they are different. The Innovation Playgrounds are physical areas in the city where different physical and virtual activities can be brought together to facilitate collaboration and co-creation between different stakeholders to address key challenges in society. For example, the LHC Trondheim developed a Catalogue of Innovation Lab Solutions which features an array of technical and social solutions such as green mobility apps, energy board games and youth sustainability workshops. The action based results arising from the innovation playgrounds in the +CityxChange can be linked to the overall aim of the BCV, which can be considered a more strategic and higher-level form of document that can provide direction. The two approaches play an important role in demonstrating Positive Energy Blocks and Districts within cities, with the hopes to set the stage for replication and up-scaling of smart and sustainable city development.

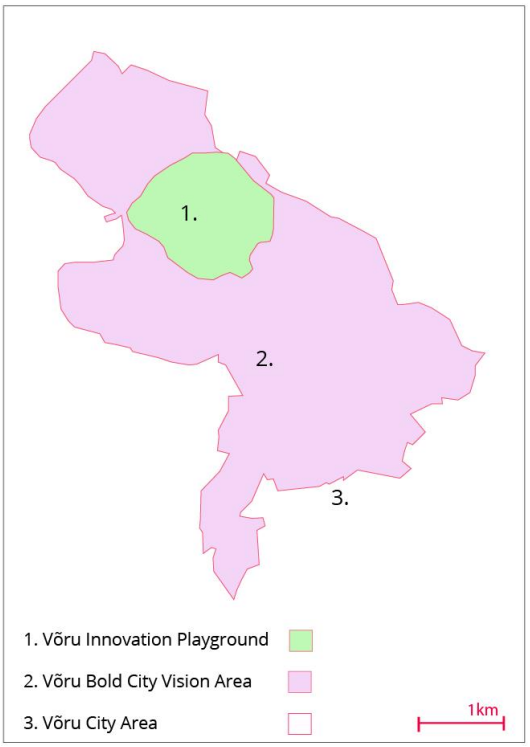



*Figure 3.1 Early stage collaborative mapping of Võru Bold City Vision 'area' and Innovation Playground, seen together. Image source: Space Engagers*

As regards limitations of the BCV and IP frameworks implementing together:

- BCV requires stable decision making and political climate to be approved and successful, while IP needs local geographical focus on sites and buildings
- Covid -19, and the impact on meaningful collaboration and co-creation processes with various stakeholder groups, was evident in implementing both frameworks

- Aligning positive energy ambitions to local challenges can be difficult, and making the two frameworks documents (BCV and IP) implement in a coherent way brings challenges

## 3.4 The development of a spatial and socio-economic framework

Business models development in +CxC has always considered, both for LHCs and FCs, the PEB as a complex Ecosystem where people-citizens live, and where the quality of life is influenced by social, economic and political conditions. As a result in +CxC in both LHs and FCs demo cases, the PEB should be a legal entity and space to live which in order to work and be efficient, needs a governance defining main and needed stakeholders', players, actors, investors and beneficiaries with their related roles and responsibilities. In this respect, PEB governance is a new idea on the basis of the LHs experience and demo cases. The image below named "A complete overview of a PEB ecosystem", taken from +CxC D 5.16 "+Trondheim Sustainable investments and business models and concepts", represents an overview of an optimal local PEB ecosystem and it includes a map illustrating complexity in interactions among all involved stakeholders. A main finding from the ecosystem mapping is that the PEB (as a concept) is complex and requires future improvements and additional elements to make it work and be convenient in terms of economic, social and governance benefits. Probably it will be difficult to operate efficiently without deep understanding and sharing of incentives and business models in addition to clarified roles.

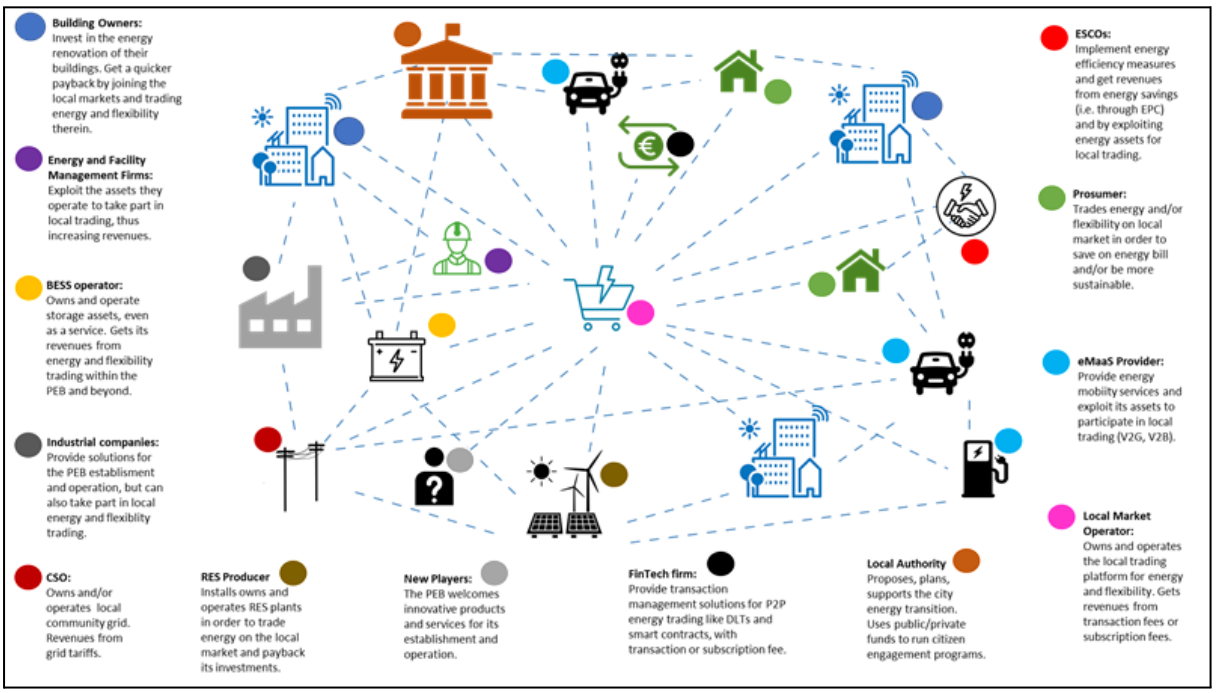



*Figure 3.2 Overview of the local PEB ecosystem with its possible stakeholders/players/actors/roles Image source: OV ( +CxC, Figure 3.5 from D5.16 - +Trondheim Sustainable investments and business models and concepts)*

One of the main findings for a PEB ecosystem is the need to integrate within all the actors participating at the PEB considering their socio-economic framework, conditions and above all expectations. This means a need to understand, analyse and match PEB members, not only in terms of energy demand, but also considering their economic, social, environmental and governance needs.

To create, develop and implement a spatial and socio-economic framework to live in as a PEB means that similar socio-economic conditions should co-exist. In fact, this deliverable is the final work and output of an analytic process to adapt and replicate through exercises such as workshops, meetings and focus-group discussions. These moments have been organised and held with the aim to get information and data to replicate parts of social and economic characteristics of some places to the geography of distinct cities and be developed in and around the innovation playgrounds. The combination of a spatial and socio-economic framework was achieved by foregrounding location based engagement and mappings and ensuring stakeholders kept the spatial, social and economic aspects of places in mind simultaneously.

For example, in Smolyan, citizens' perceptions of multiple 'centres' in the municipality became important in focusing on social groups and economic potential within the Innovation Playground, thus clarifying the public perception of where 'clusters of innovation' could happen in the city. The work of developing a spatial and socio-economic framework was done by discussing and agreeing geographical mappings of Innovation Playgrounds in each city, while also considering the social and economic aspects of the PEBs and beyond. It scales and replicates Innovation Playgrounds of Limerick (one) and Trondheim (four) but valuable lessons of implementing in Follower Cities (see Lessons Learned Section) such as 'how to translate the terms into local languages', 'scope activities carefully according to available resources', etc were derived from the work done in the five Follower Cities.

Limitations to implementation are linked to difficulties to connect and network people, knowledge and know-how to create opportunities for innovation. Other barriers or difficulties are related to missing incentives or lack of potential 'economic free zones' implementation but it depends on Public Body willingness, policies and roles.

## 3.5 Business and investment models of an Innovation Playground

Business and Investment models, as described in D3.3 "Framework for Innovation Playground", include a series of actions, tools and elements that measure, assess and give guidance on project's possible success and failure in terms of economic, financial and social factors and indicators. The design, development and implementation of Business Models in +CxC project are the result of an applied approach & methodology with the aim of experimenting innovative processes for potential deployment of PEBs/PEDs and LEM[1]s in Lighthouse Cities first, to be then replicated in Follower Cities (D6.4).

[1] Local Energy Market

The methodology foresaw a theoretical approach to achieve tangible results in terms of sustainable investments, stakeholders' involvement, beneficiaries and players. As planned and described in D2.4 and D3.3, a "mentoring" process led by OV started in 2020 and is still on-going to support and provide technical assistance to Follower Cities. The first part saw the planning and the current implementation of Positive Energy Blocks (PEBs), taking into account business and financial solutions to be developed alongside with the physical implementation of the PEBs.

## 3.6 Open calendars

The methodology for how Open Calendars are used when developing effective citizen engagement is included in this section. The approach is based on the recommendations defined in section 6.2 of 'D3.2 Delivery of the citizen participation playbook', and begins with a series of working sessions celebrated with each FC individually. In these sessions COL provided support in designing open calendars, encouraging them to connect with the appropriate partners regarding the related deliverables in WP3. These are 'D3.5 : Framework for a Positive Energy Champion network', 'D3.6 : Framework for DPEB Innovation Labs' and 'D3.4 : Framework for DPEB learning and education'. In particular COL analysed existing open calendars solutions being currently available in each FC and recommended the most appropriate to be used when performing the community collaboration and co-creation activities to promote development of DPEBs.
The design and preparation of a template regarding community collaboration and co-creation measures and open calendars was performed in order to collect information from FC such as open calendars. With all this valuable information, conclusions and recommendations are drawn. Sections 4-8 of this document includes the results of applying this approach for each FC.

## 3.7 Steps to support the acceleration

In relation to steps taken by the partners to support the acceleration of the project, specifically implementing frameworks and working towards realising PEBs in the five follower cities, the approach was developed by consulting with all cities on how best to adapt and localise framework concepts, in order to adapt to pragmatics of local variations in culture, language and governance. The work was done through online meetings, some visits, presentations of progress to each other, and submissions of documents for review by lead partners at intervals. This approach can scale and replicate easily, as it is described in more detail throughout this report. Factors that can limit acceleration may include the abstract nature of some of the framework concepts, limits to resources of certain cities, and changes in the personnel of municipalities, which can sometimes slow the progress, as new personnel become familiar with such a complex project. Some specific steps to support acceleration are outlined below for some Follower Cities, as an illustration of how this worked locally.

**Alba Iulia example 'Steps to support acceleration'**

- In Alba Iulia, a first step was promoting the Innovation Playground towards the private sector and business environment through the official channels of the Municipality and through 'word-of-mouth'
- A program was devised to stimulate the culture of innovation amongst youngsters by bringing new and smart elements in complementary educational processes.

**Písek example 'Steps to support acceleration'**

- In Písek, as a first step, stakeholders such as Technology Providers, and local entrepreneurs were engaged with, leading to later steps including association of property owners, leading in turn to initiatives like photovoltaic panels on roofs
- Preliminary locations for Innovation Playground and Innovation Lab were investigated in 2021
- Activities of the Innovation Playground were agreed at an early stage to be relevant to hold throughout the city

**Sestao example 'Steps to support acceleration'**

- In Sestao, as a first step it was agreed that schools would be targeted for general sustainability and that factories would be targeted for PVs later
- Particular locations to focus on first were identified as ; Barrio Bajo, Barrio Alto, Barrio Fábrica
- An early step involved collaborating closely with the neighbouring city of Santurtzi, where there is interest in following the general sustainability initiatives

## 3.8 Localisation and interactive mapping

One aim for the work of CommunityxChange activities in Lighthouse (LHCs) and Follower Cities (FCs) was the communication of observations, ideas and projects, spatially organised through a map of the city/district, using interactive mapping to engage citizens with their place and local issues. The work to localise interactive mapping approaches in the FCs which were implemented in the LHCs included demonstration of results of mapping workshops, online resources of completed community maps and projects. Discussion locally about applicability and the FC training and preparation needed to undertake participatory mapping related to energy and innovation in and around an Innovation Playground.

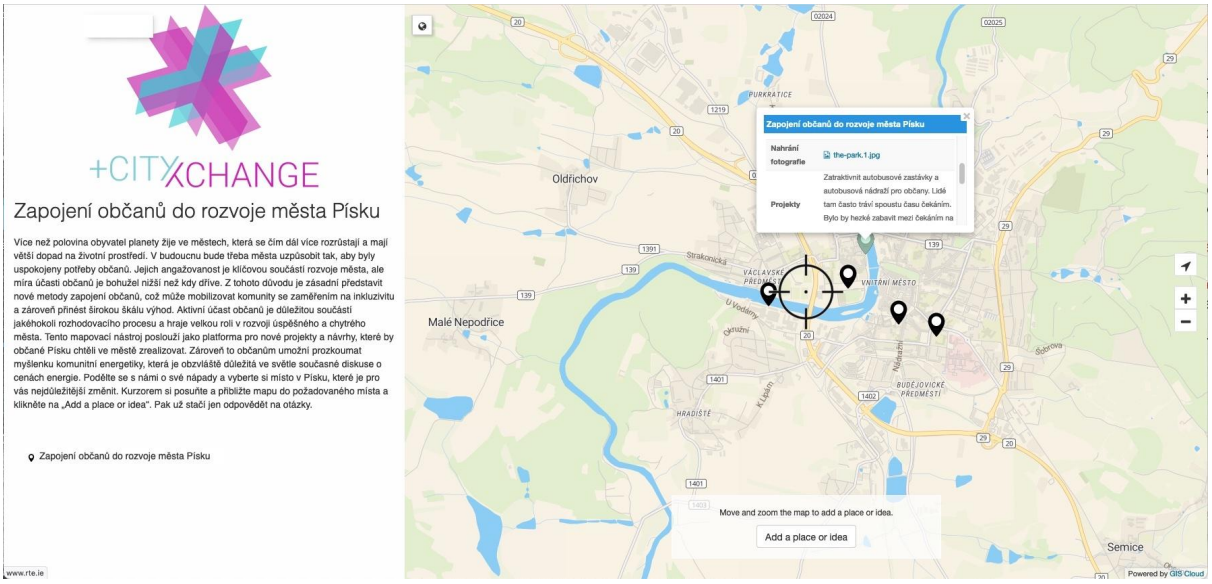



*Figure 3.2 View of Písek Community mapping tool in operation, led by the Municipality. Image source: Písek Municipality, +CxC Project, Space Engagers*

Testing different mapping softwares in different city contexts began when mapping softwares and processes used in Limerick (LHC) were tweaked and used again in Trondheim (LHC), and then in four FCs (Smolyan, Võru, Písek and Alba Iulia). Písek mapping included data about places related to energy, and was live by April 22. Smolyan started mapping in mid June, and completed by the end of July 2022. Alba Iulia did background mapping and would still like to do a community 'live' mapping event, following Smolyan (LS), who mapped to coincide with Foundation Day in June 2022. Sestao 'observed' other FCs mapping, while Võru mapped 'Bike Day' in May/June 2022. During the implementation period, it became clear that some FCs could undertake only limited participatory mapping, but some FCs did pursue localisation. Písek successfully generated mapped outputs and conversations around the themes. Alba Iulia made some background mapping locally, but the initiative stalled at implementation stage due to pressure from other activities and limited resources.

The challenge and opportunity to scale and replicate the participatory mapping related to energy and innovation in and around an Innovation Playground revealed new information

across both LHCs and FCs, partly related to some potentials and limitations of the technologies employed. While the potential of online collaborative mapping is strong, the limitations of the initiatives around participatory mapping include perceived technical complexity of (GISCloud) online mapping platforms, the perception that resources locally in the city are not prepared for the unpredictability of dealing with the public in this way, and the lack of understanding in the project about applicability and usefulness of the mapping data to the city after the mapping events.

# 4 Alba Iulia Implementation Report

*Figure 4.2 Aerial view Alba Iulia, Source: https://viziteazaalbaiulia.ro/*

## 4.1 Introduction to Alba Iulia

This Section reports on community participation and Innovation Playground implementation in Alba Iulia, and describes specific, localised, spatial and socio-economic (Innovation Playground) results for this. Community participation and Innovation Playground implementation in Alba Iulia are characterised by the fact that the municipality has done extensive works regarding citizen participation and engagement in relation to DPEBs.

The Alba Iulia Innovation Playground is in the old city centre, in the Alba Iulia Fortress. Alba Iulia Municipality committed itself to be a beacon of innovation and digitalisation in Romania. Given these initiatives and the community engagement and transparency promotion, the city quickly became a citizen friendly one and a place to sandbox sustainable development.

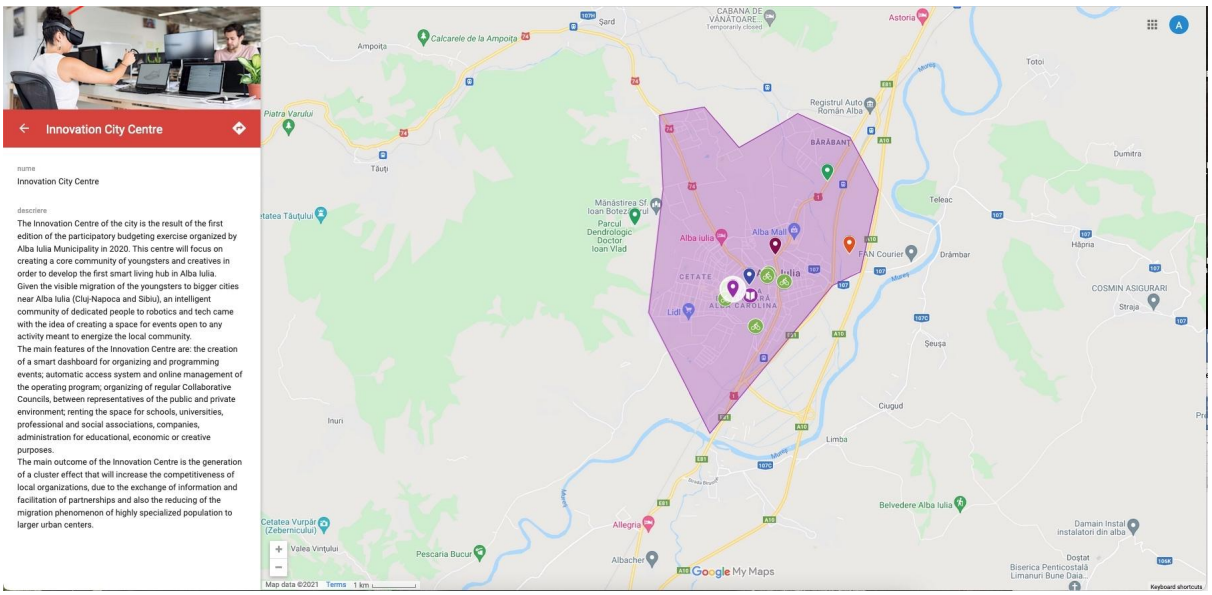



*Figure 4.1 Interim mapping by Alba Iulia Municipality to understand the Innovation Playground locally Image Source: Space Engagers screengrab.*

## 4.2 Alba Iulia Community Participation

In this section, the results of applying the approach explained in section 3 community collaboration and co-creation measures and open calendars for the case of Alba Iulia municipality are included. Next, we will start including specific recommendations given to Alba Iulia to serve as a foundation when designing their community collaboration and co-creation measures and open calendars, then each community engagement activity being organised by Alba Iulia municipality is briefly described. Finally, the community engagement results and conclusions for the citizen participatory activities are drawn. Alba Iulia will use this information to keep on improving effective and inclusive citizen engagement in their activities, resulting in continuously benefiting from higher participation rates, gain credibility in their participatory processes, community ownership, and mostly, the success of the implementation of the community collaboration and co-creation measures.

### 4.2.1 Collaborative working sessions with Alba Iulia

Section 6.2 of 'D3.2 Delivery of the citizen participation playbook' includes the recommendations particularly defined for Alba Iulia municipality in order to: achieve effective and inclusive community engagement, and to use the most suitable participation tools (physical and online) when developing community collaboration and co-creation activities and open calendars. Refer to this document for more detailed information.

### 4.2.2 Alba Iulia's community collaboration and co-creation measures and open calendars

Community collaboration and co-creation measures in Alba Iulia have ranged from Public Consultations through the Community Barometer and Climathon, to citizen participatory processes such as Participatory Budgeting and the elaboration of the Integrated Urban Development Strategy of Alba Iulia Municipality and also the Smart city strategy. They have

successfully empowered their citizens in having their say regarding Smart City Plans and public spending. Open Calendars are implemented by using the usual Alba Iulia City Council communication channels, which are: press releases, press conferences, social networks (over 10 channels of communication) and e-AlbaIulia app that worked through the free WIFI installed in various parts of the city and through the E-AlbaIulia app + over 400 beacons spread all over the city. As the evolution of smart solutions has changed, the e-AlbaIulia app is using starting 2022 only 3 virtual beacons that cover the entire city.
Next each community collaboration and co-creation measure is briefly explained, including encountered challenges and obtained results.

#### 4.2.2.1 Participatory budgeting

This activity was organised in 2020 and 2021 (with 24 and 51 projects submitted respectively). Resulting in five projects financed in 2020 and six in 2021. The voting system in 2021 was improved to a simplified platform resulting in almost 18.000 votes submitted. The participatory budgeting is the most relevant engagement activity performed by Alba Iulia Municipality so far. Building green spaces in a city neighbourhood, charging stations for electric cars and creating dedicated bike lanes for the new smart bikes are some of the projects related to the development of PEBs.
Some of the challenges faced by Alba Iulia, related mainly to the participatory budgeting process are: many incomplete and unfeasible proposals sent by the citizens, and technical problems relating to the voting system (only in 2020 edition).


*Figure 4.2 Participatory budgeting web landing page, Source: https://bugetareparticipativa.apulum.ro/*

#### 4.2.2.2 Community Barometer

The Community Barometer platform is an interactive tool that aims to stimulate the public participation of the citizens of Alba Iulia in local life by using online questionnaires. Multiple questionnaires have been sent through the Community Barometer so far i.e.: Q1: Elaboration of Integrated Strategy for Urban Development of Alba Iulia 2021-2030 Energy & Urbanism Components, Q2: Elaboration of Integrated Strategy for Urban Development of

Alba Iulia 2021-2030 Components Community Involvement & Economic Life, Q3: Elaboration of Integrated Strategy for Urban Development of Alba Iulia 2021-2030 Components Tourism, City Marketing & Heritage etc. A total of 2688 valid responses were recorded from the questionnaires and were published on the web platform of the municipality.
Many local community needs and a set of related solutions were identified by the citizens in the responses to the questionnaires.
Questionnaire Q1 is related to the energy field and aimed to collect citizen's opinions regarding global warming, pollution, alternative energy sources, energy consumption in homes, energy consumer behaviour and more.
Some challenges were faced regarding the fact that questionnaires were long and granulated, the way the data is aggregated in the back-end, the lack of a visual dashboard, and how to increase citizen engagement with the new platform. Also the implementation of the platform itself with a private operator that is lacking experience working with a public administration.


*Figure 4.3 Local Barometer, Source: https://barometrucomunitar.apulum.ro/*

### 4.2.2.3 Integrated Urban Development Strategy of Alba Iulia Municipality

The elaboration of the Integrated Urban Development Strategy of Alba Iulia Municipality 2021-2030 is currently finished and published on the official website of the municipality.
The strategy will ensure the implementation of a coherent vision of an integrated evolution of the development sectors. It is a participatory process ensured by the engagement of an Urban Advisory Group. The Urban Advisory Group included representatives of civil society, academia, the business sector, the social sector and other public and private institutions in various fields from local, county and regional level.
Some of the challenges are due to pandemic restrictions during public consultations and political changes at local level, which delayed data collection.


*Figure 4.4 nZEB building Delphi Electric, Source: Tudor Drambarean.*

#### 4.2.2.4 Climathon

Alba Iulia organised a Climathon on 24 November 2022 in collaboration with the local University "1 Decembrie 1918 Alba Iulia". All Climathoms will be described in more detail in the upcoming Deliverable titled: D10.14 9 Climathons.

This first Climathon organized in Alba Iulia was registered in the Climathons network of events (https://eit.europa.eu/news-events/events/eit-climate-kic-climathon).

This was a great success for the city given the fact that the event was held in the first Net Zero building in Alba Iulia and 45 participants proposed climate change solutions for the city which were successfully elaborated and then evaluated by the jury. The Climathon was a great opportunity to increase citizen awareness regarding localising SDGs, including energy efficiency and climate footprint related projects. The Climathon also encouraged youngsters to have their opinions on topics related to climate and sustainability at local level, raising awareness on the importance of these topics. The University is eager to organise the second Climathon event some time in 2023 at an even larger scale.

*Figure 4.5 (above), Figure 5.6 (below) Climathon event Alba Iulia, Source: Tudor Drambarean.*


*Figure 4.7 Climathon poster Alba Iulia, Source: Tudor Drambarean.*

### 4.2.3 Conclusions and recommendations

Alba Iulia municipality has done significant works regarding citizen participation and engagement in relation to DPEBs in spite of the Covid-19 pandemic which affected considerably the citizen participation events.
Although there were not so many citizen engagement activities organized in 2020 and 2021, in 2022 this changed thanks to the involvement of Alba Iulia Team.
As regards Budgetary participation events, citizen engagement rates have risen in the participatory budgeting platform, from 24 submitted in 2020 to 51 in 2021 revealing greater interest from the side of citizens. Several proposals were related to the creation of DPEBs, such as building green spaces in a city neighbourhood and creating dedicated bike lanes.
The participatory budgeting has raised great interest in the local community and it is expected to keep growing in the coming editions. The city has achieved citizens' trust and credibility in the participatory budgeting exercise.

On the same page, the citizen participation in the Community Barometer online platform has been of great support for different EU projects and decision making processes. The Barometer is a public consultation tool for identifying citizen needs and finding possible solutions in relation to PEBs. In particular, the responses to the questionnaire "Q1: Elaboration of Integrated Strategy for Urban Development of Alba Iulia 2021-2030 Energy & Urbanism Components" have been used for the elaboration of the Integrated Urban Development Strategy.
A list of recommendations by Colaborativa, the Lead authors of the D3.2 document on citizen participation, is included next in order to continuously foster citizen engagement and the development of PEBs in Alba Iulia municipality:

- Alba Iulia would greatly benefit from organising informative sessions with local communities regarding localising the SDGs, which also aims to support stakeholders in implementing the Bold City Vision framework.
- We encourage the citizen informative sessions to be celebrated as physical actions (see Section 4.6 of D3.2 for a detailed list and description) since sufficient online communication systems are already in place. For example mapping sessions or public engagement events.
- Continuous communication with citizens is crucial to ensure the success of the implementation of the final measures resulting from any participatory process. For the case of participatory budgeting, we encourage to be transparent and disseminate all the information regarding the implementation of the projects to be financed.
- For the case of the Community Barometer, continuous communication is essential for increasing engagement rates and trust in the online tool. The citizen needs to know how and when this information is used to make decisions at a local level, such as how they affect city strategic documents.
- Open data: the information extracted from the questionnaire in the Community Barometer needs to be shared publicly ensuring the privacy of the citizens. This will help gaining credibility of the tool by the community, and to be reused by other institutions or communities. It would be of great help to foster citizen participation to include all this information in the Open Data Platform.
- Alba Iulia can revisit "Section 4.3 Process 2: Collaborative Legislation from D3.2" for the elaboration of the Integrated Urban Development Strategy of Alba Iulia Municipality 2021-2030. The setting up of a multidisciplinary working group has been successfully done with the Urban Advisory Group. Results of Q1 from the Community Barometer are being used in the definition of the strategy.

## 4.3 Alba Iulia Innovation Playground

Alba Iulia Municipality has a unique urban form, derived from the star-shaped Vauban Fortress situated in the heart of the city, giving the impression of a city surrounding the city-fortress. The Innovation Playground boundary, which coincides with the municipal boundary of the entire city of Alba Iulia, two PEBS (in the old city centre), Romania's first Energy Observatory, 'The Innovation Centre of the City' (Innovation Lab in the Citadel), the specific Alba Iulia 'Smart City Interventions' and an ongoing Stakeholder Engagement Plan, are all included in the Alba Iulia Bold City Vision to 2050. The overlap/link between the Alba

Iulia PEBs and Alba Iulia Innovation Playground is that both the PEBs are in the old city centre (and also in the centre of the Alba Iulia Innovation Playground) so the PEBs are easily understood by citizens as the centre for positive energy behaviour for the whole city.

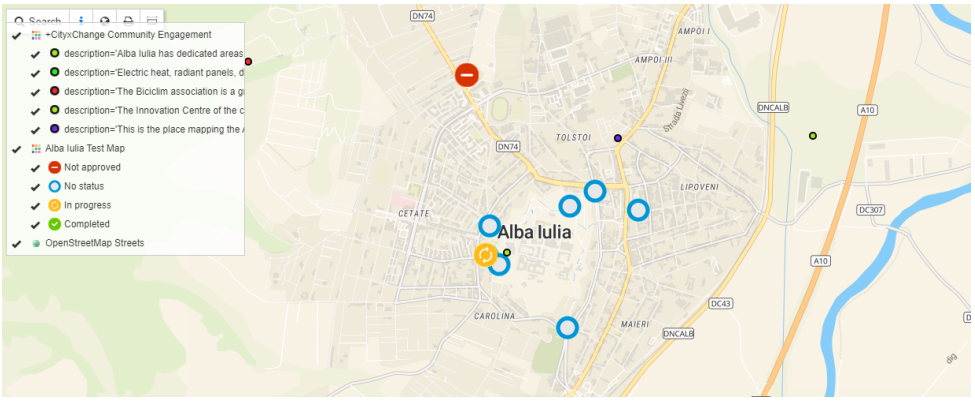
The Innovation Playground of Alba Iulia consists of various physical and online activities, ranging in different areas: from investments made by the municipality through EU funds, to public consultations, civic activities (Budgetary participation: 2020, 2021, and 2022 edition), Climathon event organised in 2022, implementation of inclusiveness projects (Children's Museum in 2023), development of open data tools (first trial in 2022), deployment of crowd-sourcing apps (in 2022), etc. The municipality employs all these tools in a coherent manner in order to ensure innovation growth in the area of the DA and beyond.

### 4.3.1 Alba Iulia Innovation Playground System

The Alba Iulia Innovation Playground System is made up of four interrelated elements, of 'places', 'activities', 'data' and 'enabling mechanisms':

#### Alba Iulia Places

- The Fortress, a place with important potential for growth in the innovation area.
- The Children's Museum (in the making): where children will be able to explore and experiment in various ways, an urban prototype
- Art Gallery called "Caponiera" in the Citadel, to stimulate the culture of innovation amongst youngsters
- The Innovation Centre of the City: the newest place where innovation happens




| # | ID | CREATED | MODIFIED | Approved | What is your favourite thing about Alba Iulia | How many times a week do you visit the city centre? | How do you travel to the city centre? | Status |
|---|---|---|---|---|---|---|---|---|
| 0 | 2 | 12/02/2021 8:13:43 AM | 03/20/2023 12:00:08 PM | 1 | LIME e-Scooters station | Every day | Car | |
| 1 | 3 | 12/02/2021 8:21:07 AM | 03/20/2023 12:00:09 PM | 1 | LIME e-Scooters station | Every day | Car | |
| 2 | 6 | 12/02/2021 8:25:02 AM | 12/02/2021 11:43:19 AM | 1 | LIME e-Scooters station | Every day | Car | in progress |
| 3 | 5 | 12/02/2021 8:23:31 AM | 03/20/2023 12:00:12 PM | 1 | LIME e-Scooters station | Every day | Car | |
| 4 | 4 | 12/02/2021 8:22:00 AM | 03/20/2023 12:00:13 PM | 1 | LIME e-Scooters station | Every day | Car | |
| 5 | 7 | 12/02/2021 8:26:39 AM | 03/20/2023 12:00:14 PM | 1 | LIME e-Scooters station | Every day | Car | |
| 6 | 8 | 12/02/2021 8:33:53 AM | 03/20/2023 12:00:15 PM | 1 | i'Velo bikes renting centre | Every day | Car | |
| 7 | 9 | 12/02/2021 8:34:53 AM | 03/20/2023 12:00:16 PM | 1 | Electric bikes and other vehicles to explore the Citadel | Every day | Car | |
| 8 | 10 | 12/02/2021 8:36:32 AM | 03/20/2023 12:00:20 PM | 1 | Great potential for using solar panels and new sustainable technologies | Every day | Car | |
| 9 | 11 | 12/02/2021 8:38:43 AM | 03/20/2023 12:00:21 PM | 1 | Solar panels for sustainable energy on private house | 1-2 times | Car | |

*Figure 4.8 Alba Iulia Test Community Mapping website, and sample responses, November, 2021 Source: Alba Iulia Municipality, Space Engagers.*

### Alba Iulia Activities

This Section briefly records activities of the Alba Iulia Innovation Playground which are more fully described in the Community Participation Section of this Report, including:

- Tech Generation program/mentorship: taking into account the need to increase innovation at local and regional level, in order to stimulate a culture of innovation
- "Digital Literacy" programme, facilitating the growth of a new generation of digital specialists locally
- "Learn to code" programme - basic introduction in coding for youngsters, to contribute to the growth of the local IT environment.
- The first Climathon in Alba Iulia: the Climathon, represents the first-of-a-kind event in Alba Iulia, addressing local challenges in the climate and energy area
- Participatory budgeting project, the most important civic activity at local level with a high interest among local inhabitants
- Local SMEs such as Delphi Electric, which recently just launched the first net0 building at local level to provide a dedicated space for events focused on climate change actions and eco-friendly civic initiatives (the place where the Climathon was held).

### Alba Iulia Data

- Participatory budgeting project data
- Energy consumption data
- Smart Alert Alba Iulia App data
- e-Alba Iulia mobile app data
- Community Barometer data
- The Open Data platform
- The electronic portal for citizens
- Data within 2 strategic documents: The Integrated Development Strategy and the Smart City Strategy

### Alba Iulia Enabling Mechanisms

- The BI Smart platform, to provide electronic services for the public
- The electronic portal for citizens
- Alba Iulia Open Data Platform, using the city map as a graphical medium
- The "Tech Generation" programme with its 2 components: "Learn to Code" and "Digital literacy". The implementation of the programme involves the arrangement of a technology hub in the city of Alba Iulia
- Alba Iulia Smart City Strategy: mechanism to enable the city to develop its path in the direction of becoming one of the first smart cities in the country.
- Participatory budgeting mechanism

## 4.3.2 Alba Iulia Innovation Playground Journey

In relation to steps to support the acceleration to a positive energy city which involved adaptation to local conditions (or localisation), the Alba Iulia Innovation Playground 'Journey' moved from an 'Engage/Observe' stage in 2020 to a 'Design/Make Sense' stage during 2020 and 2021. 'Engage/Observe' included discussions locally on where the Innovation Playground should be, how it could localise concepts, and learning about the Trondheim and Limerick experiences through Learning Workshops and meetings. In December 2021,

Alba Iulia was at the 'Activate-Ideate' stage of an innovation journey (from observation and sense-making to co-design and prototyping). Through the delivered events and activities, the municipality continued its path towards reaching new heights in the smart city area, by developing a set of tools and mechanisms which will enable it to continue its Innovation Journey beyond this project.

The Innovation Playground is a large part of the city of Alba Iulia, an area where multiple events or actions will take place over the course of the next years, using the quadruple helix approach (local authorities, SMEs, research organisations and citizens), while the Municipality will have a pivotal role in its implementation. The Innovation Playground will thus take place both in the physical and online sphere and will enable the municipality and local stakeholders to test and trial novel solutions that will be evaluated according to +CityXChange impact and KPIs.

### 4.3.3 Alba Iulia Localised Innovation Playground

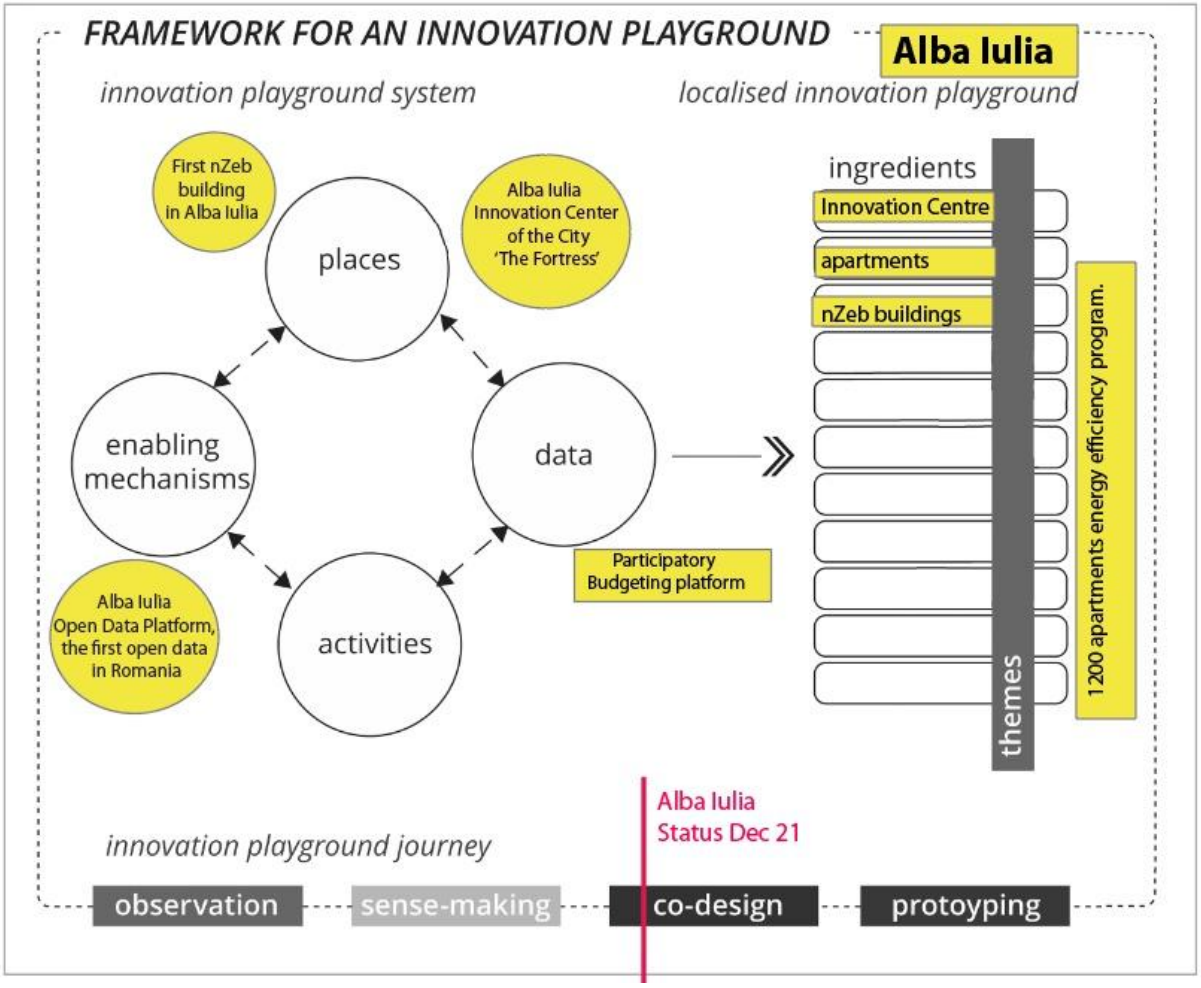



*Figure 4.9 Alba Iulia Localised Innovation Framework, Dec 2021, Image Source: Space Engagers*

Localising Innovation Playground concepts in Alba Iulia involved following Task Steps as set out in the Table below.

| Task Steps | Alba Iulia |
|---|---|
| developing a brief; | • Promoting the concept of community involvement in the creation of the Innovation Playground;<br>• Promoting the Innovation Playground towards the private sector and business environment through the official channels of the Municipality and through "word-of-mouth";<br>• Creating and promoting a Participatory budgeting project, with a dedicated platform to engage the community in submitting projects, ideas and vision upon different gaps that have to be filled by the Municipality;<br>• Creating awareness related to the fact that the Municipality is funding citizens ideas and involve the decision makers in communicating with the community;<br>• Collecting data and opinions from the citizens through the Public Barometer platform;<br>• Alba Carolina Fortress dedicated to the Innovation Center of the City: already 2 innovation establishments are located in the Alba Carolina Fortress. |
| examining precedents; | Alba Iulia developed between 2017-2019 the biggest smart city pilot project in Romania, based on non-commercial partnerships with private companies (45 companies), institutions and NGO's. The project rapidly became a reference for Romania in terms of number and innovative solution tested, and a model for other cities. Implemented with the Ministry of Communications, Alba Iulia Smart City Pilot Project meant to transform the city into a smart one. The project was unique in Romania, because it was developed jointly by the national government, a local public authority and private companies; smart city solutions proposed by companies were implemented and tested on their costs, the municipality ensuring only the infrastructure and the dedicated personnel; successfully implemented 58 innovative solutions (from 106), used by thousands of citizens.<br>Alba Iulia Smart City pilot identified local needs and used smart technology and data in addressing present and future city challenges in order to ensure increased quality |

| | |
|---|---|
| | of life for its citizens. Within the pilot, smart solutions were implemented for public administration, local business, urban planning, mobility, ITC & utilities, environment, public safety, health, sustainable buildings, education and tourism, through the collaboration between local authorities, institutions, universities, companies and volunteers.<br>Alba Iulia also studied the emerging Trondheim Innovation Playgrounds and the Limerick Innovation Playground in 2021-2022 for applicable implementation knowledge, for example in community mapping. |
| identifying user personas - focus on understanding users; | Stakeholders - private companies, NGOs, volunteers and local institutions to benefit from the Innovation Playground activities. They were identified based on their former collaboration within the Alba Iulia Smart City pilot project, based on their former partnerships with the municipality and on their involvement in urban local groups within different EU projects.<br>Technology Providers - identified as collaborators and investors within Alba Iulia Smart City pilot project and other collaborations with the municipality (even as providers of different solutions)<br>Municipal Authorities (feasibility Study Alba Iulia)<br>SMEs - identifies as in the case of Technology providers<br>Local universities - Alba Iulia Municipality has a strong and already traditionally established partnership with the „1 Decembrie 1918" University in the city and also with UTCN - the technical wing of Babeș-Bolyai University in Cluj-Napoca<br>Citizens - identified within the events organized by the municipality in the last 15 years, within the smart surveys published between 2017-2018 (over 12.000 responses), within the participatory budgeting process and within the community barometer platform (over 2600 inputs from the citizens). |
| identifying supports. | The municipality<br>Local stakeholders, companies, NGOs, citizens, etc |

*Table 4.2 +CityxChange adaptation to local conditions in Alba Iulia*

### 4.3.4 Implementation Results Alba Iulia Innovation Playground

The implementation results of Alba Iulia Innovation Playground can be categorised into achievement of aims in relation to four aspects: Purpose, Outputs, Outcomes and Performance of Alba Iulia Innovation Playground.

| Achievement of the Purpose of the Alba Iulia Innovation Playground can be measured in terms of: |
|---|
| Alba Iulia Innovation Playground **brings different virtual and physical places and activities related to inclusive and open innovation into a coherent structure.** The Innovation Playground of Alba Iulia consists of various physical and online activities, ranging from investments made by the municipality through EU funds, to public consultations, civic activities (Budgetary participation), Climathon events, implementation of inclusiveness projects (Children's Museum), development of open data tools, deployment of crowd-sourcing apps, robotics and digital solutions development etc. The municipality will employ all these tools in a coherent manner in order to ensure innovation growth in the area of the DA. |
| Alba Iulia Innovation Playground **facilitates collaboration**, including between citizens, research institutions, local government, state agencies, businesses and civil society organisations. The municipality plays a pivotal role in this process and it carries out all the necessary efforts to implement the quadruple helix at the level of the Innovation Playground, by involving all the relevant stakeholders locally. |
| Alba Iulia Innovation Playground **empowers citizens** to actively participate in processes of change through the various online and physical tools which it currently implements (budgetary participation, public consultations through the Community Barometer, Climathon event, etc). The municipality is already coordinating various Local Support Groups through the different EU projects implemented locally. |
| Alba Iulia Innovation Playground **helps to find new, relevant and effective ways of addressing challenges that matter to people**. Through offering the innovation vision, and deploying the novel online and physical activities bring new ways of thinking and addressing the things and issues that interest the local citizens. The Innovation Playground also enables a deeper citizen engagement at local level and a greater role for the citizens in the local decisions. |

| Achievement of the Outputs of the Alba Iulia Innovation Playground can be measured in terms of: |
|---|
| Alba Iulia Innovation Playground helps the engagement of a broad cross-section of citizens and other stakeholders in activities related to their place and local issues. Through the multitude of **projects/activities/events** envisioned at the Innovation Playground, a diverse group of stakeholders can be involved of all ages and backgrounds. From citizens to tourists, SMEs and Academia reps, local authorities and civil society reps, all can engage in positive cycles of collaboration (where actors form further collaborations). |

Alba Iulia Innovation Playground **helps citizens and other stakeholders to feel empowered** and able to influence their place and change things. All the relevant local stakeholders were engaged in the Alba Iulia Smart City Strategy elaboration and in the Integrated Strategy for Urban Development. Also, through projects such as the Participatory Budgeting, the empowerment of citizens will reach a new height. Moreover, events such as the Climathon will encourage youngsters to have their say in aspects related to climate and sustainability at local level, raising awareness on the importance of these topics.

Alba Iulia Innovation Playground **helps progress in relation to UN Sustainable Development Goals and the Low Carbon Transition**. The Innovation Playground aims and objectives are in line with the strategic documents of the municipality (Integrated Strategy for Urban Development, Smart City Strategy, Sustainable Energy Action and Climate Plan, Urban Mobility Plan, etc). The strategies are all related to the UN Sustainable Development Goals. Thus, the Innovation Playground is an instrument aimed for reaching the mentioned goals.

Outputs of an Innovation Playground are expected to include new ways of doing things; **new partnerships, places, tools and activities.** The key stakeholders expected to use an Innovation Playground (again, according to D3.3) included building owners and occupants, citizens, local companies, local communities and communities of interest, civil society organisations (CSOs), Local Government, universities / research groups, entrepreneurs and innovators. In Alba Iulia, the new partnerships, places, tools and activities include a Climathon event, a community engagement meeting at the first net0 building in the city, 3rd edition of the Participatory Budgeting event, the inauguration of the Innovation Centre of the City, Open Data platform dedicated to social care field, Open Data platform dedicated to all the projects with EU and government funds were implemented.

**Achievement of the Outcomes of the Alba Iulia Innovation Playground can be measured in terms of:**

Alba Iulia Innovation Playground (IP) enables **new ways of doing things**. The Innovation Playground represents an innovative area within the city where novel techniques and activities are tried and implemented. Through the range of actions and activities the concept will enable the municipality to demonstrate and experiment new activities for the benefit of local development.

Alba Iulia Innovation Playground enables **new partnerships** through, for example, the multitude of stakeholders involved. The IP will ensure the cooperation of local authorities, with local SMEs, Academia and NGOs, including citizens.

Alba Iulia Innovation Playground enables **(new) places (of innovation).** For example, the IP will be scalable not only at Alba Iulia level but also at the level of other municipalities in the country, with potential network effects. Since most of the activities within will represent good practices to be replicated at the city level, this will insure the development of other IP places/areas and involvement of new relevant stakeholders.

Alba Iulia Innovation Playground **enables (new) tools and activities (of innovation)** partly through experimenting various new activities, never tested before at the city level. Through allowing more citizen involvement in the process and through the quadruple helix which will insure involvement of all relevant stakeholders.

**The Performance of the Alba Iulia Innovation Playground can be measured in terms of:**

Alba Iulia KPI 30 ('number of innovation labs/playgrounds contributing to the creation of DBEP'). The current status/potential of introducing an **Innovation Lab** in Alba Iulia is evident in important steps which have been made in this direction (in spite of Covid-19 blocking several projects and physical events). The year 2022 represented an important change that brought the IP to a whole new level in Alba Iulia. The new Innovation Centre of the City and the "Tech Generation" Programme are part of the Innovation Lab in Alba Iulia. Moreover, another important perspective is open: The Princely Palace, which is now in a rehabilitation and restoration process. Places dedicated to innovation are to be established here.

As regards **Alba Iulia metrics** related to the different stakeholders engaged, metrics related to stakeholder engagement in Alba Iulia are available in the budgetary participation process documents. There have been 51 projects submitted by the citizens in 2021, of which 24 were validated and 6 eventually funded. 12 were sent to local stakeholders and then analysed through the Community barometer. There are also flows of data between actors in the ecosystem; all focussed on progressing the clean energy transition and realising the Bold City Vision of Alba Iulia.

Alba Iulia **innovations** that emerge, in and around the Innovation Playground of Alba Iulia include:

- Open data platform: started as a pilot within Alba Iulia Smart City pilot project, the open data platform is the first of its kind in the Romanian public administrations.
- DPEB of Alba Iulia, which will certainly be an innovation in the area of energy efficiency.
- The budgetary participation project, which can certainly be considered innovation in the civic area.
- The Public Barometer web-based platform;
- The e-Albalulia app for e-governance;
- The web-based platform for public electronic services;
- The one-stop shop within the main building of the Municipality;
- City Cycling - an app to monitor how many people are cycling in the city and their contribution to climate change (evaluated based on distances covered and tons of carbon dioxide not emitted in nature);
- Interactive system at Principia Museum in the centre of the Citadel
- Construction of the Children's Museum, with innovative methods of showcasing and learning;
- Thermal rehabilitation within Sports High School
- The "Social Green" project - in 10 apartments located in one of the blocks of social housing of the Municipality,
- Testing 5G in Alba Iulia through a project called „5G Victori";
- Smart Public Lighting system all over the city;
- Smart pedestrian crossings at city level;
- Smart Mobility solutions;
- Web-based platform dedicated to foreign investors (only in English for the moment);
- Electric buses for public transport, smart bikes and dedicated stations, traffic surveillance, smart traffic lighting system;
- New e-ticketing system for public transport;
- Digital eco-islands, dedicated to waste management;
- Integrated system for paying taxes and fees for citizens - Self Pay terminals;
- Digital map of the municipality, with street index and points of interest, information on Zonal Urban Plans (PUZ), detailed information on the streets in Alba Iulia, their regulated profile and legal status, information on the existence of technical and municipal networks.

Evident **qualitative and quantitative changes** in Alba Iulia include:

- The retrofitting project for the 1200 apartments, which will bring an important qualitative change in the comfort and budget of 1200 families living in the city.
- The "Social Green" project
- Thermal rehabilitation within Sports High School of thermal energy with air-to-water heat pumps
- Smart Public Lighting system all over the city to decrease the consumptions and pollution by 50%;

| |
|---|
| • Smart pedestrian crossings at city level to mitigate the accidents and for public safety. |
| Alba Iulia replications (WP8, Scaling-Up, **Replication and Exploitation**), include : **DPEB area simulation,** which will be replicated at local level following the example of Lighthouse cities. |

### 4.3.4 Alba Iulia Innovation Playground Conclusions

Alba Iulia Innovation Playground represents a virtual and physical space where citizens, local authorities, organisations and local businesses try out their own ideas and help co-create the future they want to live in. The Innovation Playground enables the municipality of Alba Iulia to further develop its DPEB and to scale it at city level.

The tools employed for this process represent innovations for a local authority and will be a proof that smart tools and innovations are not exclusive to private sector actors, but also for local authorities.

Through the activities and events foreseen at the Alba Iulia Innovation Playground (Climathon, Budgetary participation project, Children's Museum, Fortress area activities, Smart public lightning, Innovation Centre of the City etc.) the DPEB will be enhanced and the municipality will benefit greatly from the involvement of an important number of relevant stakeholders locally in a collaboration and co-creation process that encourage innovation in all areas, including energy efficiency. Last but not the least, this process will enable the stakeholders to be part of the overall decision-making process at local level.

# 5 Písek Implementation Report

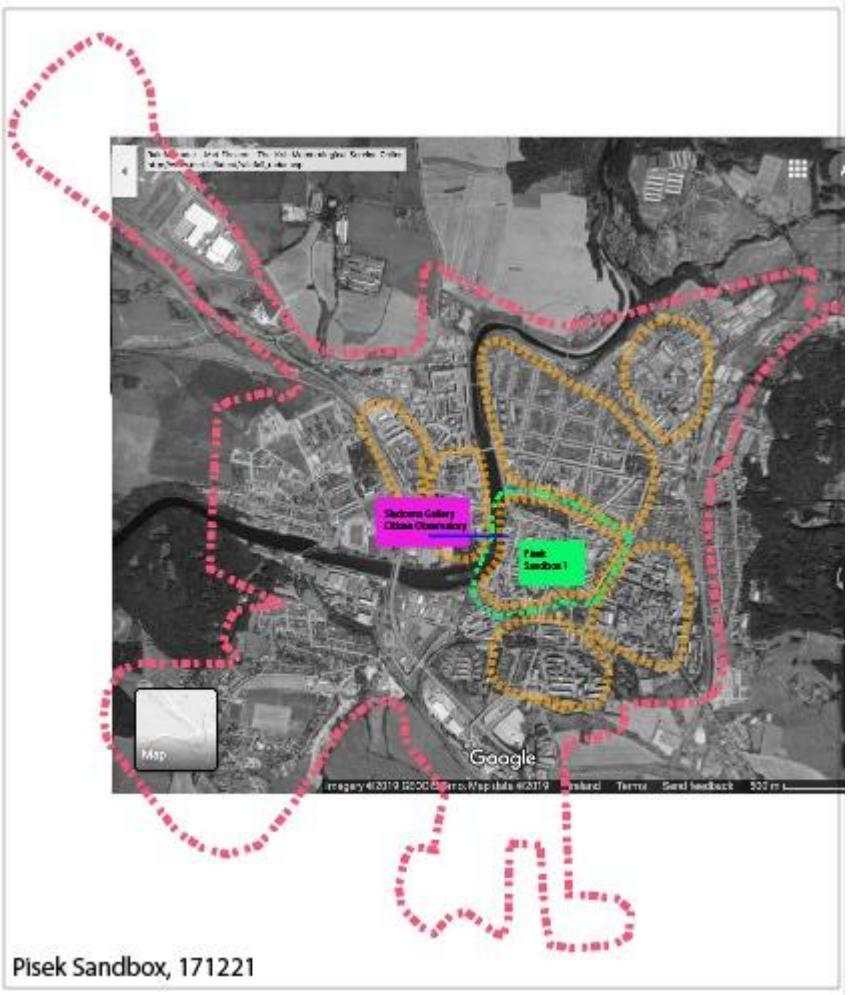



*Figure 5.1 Interim mapping by Písek municipality to understand the Innovation Playground and concept of "Sandbox" locally. Image source: Space Engagers, 171221.*

## 5.1 Introduction to Písek

Community participation and Innovation Playground implementation in Písek are characterised by the Blue and Yellow Book. To expand on it, it means that in order to be able to cover the activities around Smart Písek and to come up with system concepts that outline priorities within the areas defined by the Blue and Yellow Book, it is crucial to propose projects suitable for implementation. These two matters mentioned above are also characterised by the fact that the overlap/link between the Písek PEBs and Písek Innovation Playground includes that one of the PEBs is in the old city centre (also the centre of the Písek Innovation Playground) and the virtual PEB is easily understood online by the whole city.

## 5.2 Písek Community Participation

In this section, the results of applying the approach explained in section 3 community collaboration and co-creation measures and open calendars for the case of Písek municipality are included. We will start including each community engagement activity being organised by Písek. Then, the community engagement results and conclusions for the citizen participatory activities are drawn. Písek will use this information to continuously improve effective and inclusive citizen engagement in their activities, resulting in continuously benefiting from higher participation rates, gain credibility in their participatory processes, community ownership, and mostly, the success of the implementation of the final community collaboration and co-creation measures.

### 5.2.1 Collaborative working sessions with Písek

Section 6.2 of 'D3.2 Delivery of the citizen participation playbook' includes the recommendations particularly defined for Písek municipality in order to: achieve effective and inclusive community engagement, and to use the most suitable participation tools (physical and online) when developing community collaboration and co-creation activities and open calendars. Refer to this document for more detailed information.

### 5.2.2 Písek's community collaboration and co-creation measures and open calendars

Community collaboration and co-creation measures in Písek have ranged from Public Consultations through citizen participatory processes such as Participatory Budgeting. They have successfully empowered their citizens in having their say regarding community energy and public spending.
Písek Municipality has been closely working with the following communities: citizen associations such as the Water and Greenery in Písek (Voda a zeleň v Písku), a citizen group focused on environment topics in the city; local and regional institutions such as Píseckem, s.r.o and cultural agents such as City Library Písek (Městská knihovna Písek), Písek Culture Centre and The Playful Gallery Sladovna. In particular, the Water and Greenery local association is working with the Department of Environment in Písek; this collaboration will greatly influence major future city decisions regarding community energy. Písek municipality is also working with local companies offering photovoltaic services.
Additionally to press releases, the Mesto Písek Municipal Website and Facebook, Open Calendars are implemented through a new application, the new citizen oriented communication platform which is currently in use through a mobile application and continuously being improved based on the citizen reviews. This centralised communication platform includes an Information System, the Electronic Official Board System, the Citizen Relationship Management System, the Information platform by city areas and the Citizen Communication Platform. Next each community collaboration and co-creation measure is briefly explained, including encountered challenges and obtained results.

#### 5.2.2.1 Písek Participatory Budgeting System

The second year of the Participatory Budget was launched in September, 2021, the best feasible projects are being selected in Spring 2022 and will be announced soon.
Some of the challenges faced in 2021 include the rise in building materials price due to high inflation. Individual projects' budgets need to be reviewed and proposals might possibly incur changes to meet financial requirements. The city of Písek has increased to 3 million Czech crowns the budget for 2022 participatory budgeting.

#### 5.2.2.2 Citizen Engagement – Hlava v Písku (Hand in the Sand)

This activity took place in October 2021. The main purpose of this event was to facilitate citizens to visit places in the city that they normally are not able to in order to raise awareness regarding community energy consumption. Some of the visited locations were the new water treatment plant, a composting plant or waste sorting plant.
Hlava v Písku engagement activity had a high participation rate in its first edition with 240 visitors. The key factors for its engagement success were: being inclusive enabling citizens from children and families to seniors to join the visits, including satisfaction forms for getting feedback from participants regarding the event itself and also about the city management and involving other city organisations, which has been key to reach different communities in the citizen engagement process.
The program included the celebration of the first Climathon 2021 to foster citizens' debate regarding development of solutions to specific climate challenges.
Some of the challenges faced by Písek municipality were that the pandemic affected citizen attendance and that the registration process needs to be improved for an easier and quicker process. They are also planning to involve additional citizen organisations to broaden the participation to new communities, and to celebrate more participatory activities given the enthusiasm shown by the citizens.
Next edition of Hlava v Písku is planned for September, 2022.

#### 5.2.2.3 Písek Energy Communities Campaign: 2021 Climathon

The 2021 edition of Písek Climathon was focused on the concept of community energy. Citizens were informed through public engagement events such as attractions and local activities. United Nations SDGs and Písek Bold city Vision were presented to citizens. Feedback from citizens was collected at the end of the activities for continuous improvement of the organisation of future public engagement events.


*Figure 5.1 Hlava v Písku engagement activity program, Source: Písek Municipality*

### 5.2.3 Conclusions and recommendations

Písek municipality has been working in developing collaborations with different stakeholders: such as the Water and Greenery local association and local sustainable energy companies. The engagement of relevant local stakeholders is resulting in communities being able to influence city decisions and being involved in solving local issues. Citizens are being empowered by Písek municipality and as a result they are actively participating in changing things in their surroundings. Engagement rates are expected to rise in the coming community collaboration and co-creation measures.

A list of recommendations by Colaborativa, the Lead authors of the D3.2 document on citizen participation, is included next in order to continuously foster citizen engagement and the development of PEBs in Písek municipality:

- We encourage the citizen informative sessions to be celebrated as physical actions (see Section 4.6 of D3.2 for a detailed list and description) targeting citizens under 65 years old since there is a high employment rate. For example using Go & find citizens actions.

- Improvements have been made engaging stakeholders, we recommend making an extra effort involving universities and research institutions in order to diversify the participation. The engagement of the different target groups in the innovation process will result in measures from which all involved groups can benefit.
- Digital communication channels are already in place through the new citizen oriented communication platform. We recommend strengthening outdoor communication campaigns to extend the reach of their engagement.
- Continuous communication: we encourage to be transparent and disseminate all the information regarding the implementation of the projects to be financed in the participatory budgeting.
- To keep organising Písek Climathon in order to raise citizen awareness regarding localising SDGs and community energy.

## 5.3 Písek Innovation Playground

This Report defines a spatial and socio-economic (Innovation Playground) framework for Písek as including an Innovation Playground boundary which coincides with the municipal boundary of the entire city of Písek, 2 PEBS (one physical, in the old city centre, one virtual), the Písek citizens observatory - Sladovna , the specific Písek 'Smart City Interventions' and an ongoing Stakeholder Engagement Plan, all within the Písek Bold City Vision to 2050. The overlap/link between the Písek PEBs and Písek Innovation Playground is that one of the PEBs is in the old city centre (also the centre of the Písek Innovation Playground) and the virtual PEB is easily understood online by the whole city.

### 5.3.1 Písek Innovation Playground System

The Písek Innovation Playground System is made up of four interrelated elements, of 'places', 'activities', 'data' and 'enabling mechanisms':

#### Písek Places

- Sladovna gallery, URBANIA, an original interactive exhibition, and an urban prototype for the city

#### Písek Activities

This Section briefly records activities of the Písek Innovation Playground which are more fully described in the Community Participation Section of this Report, including:

- Climathon
- Mapping Tool use for 'Community Energy'
- Head in the Písek,
- Representative Stall

#### Písek Data

- Participatory budgeting project PARO data
- Information portal about energy consumption of schools

Písek Enabling Mechanisms

- Písek's participatory budget system

### 5.3.2 Písek Innovation Playground Journey

As regards steps to support the acceleration to a positive energy city which involved adaptation to local conditions (or localisation), in December 2021, Písek was at the 'activate-ideate' stage of an innovation journey (from observation and sense-making to co-design and prototyping). Here is an overview of projects:

- Projects in preparation: City climatologist, Pilot project: green roofs in Písek, Swedish trees, Green walls
- Projects in progress: COST (European Cooperation in Science and Technology), +CityxChange, Citizen engagement, Shared bikes in Písek II, Do it!, United for Smart Sustainable Cities, ISO 50 0001, Climathon Písek 2021/2022, Mapping Tool
- Completed projects: Increasing the efficiency and transparency of public administration through the development of the use and quality of the ICT system, URBANIA, Development of Smart City Písek, SECAP, Internet of things, Traffic navigation system, Sustainable Mobility Plan and Písek Sustainable Green Plan

### 5.3.3 Písek Localised Innovation Playground

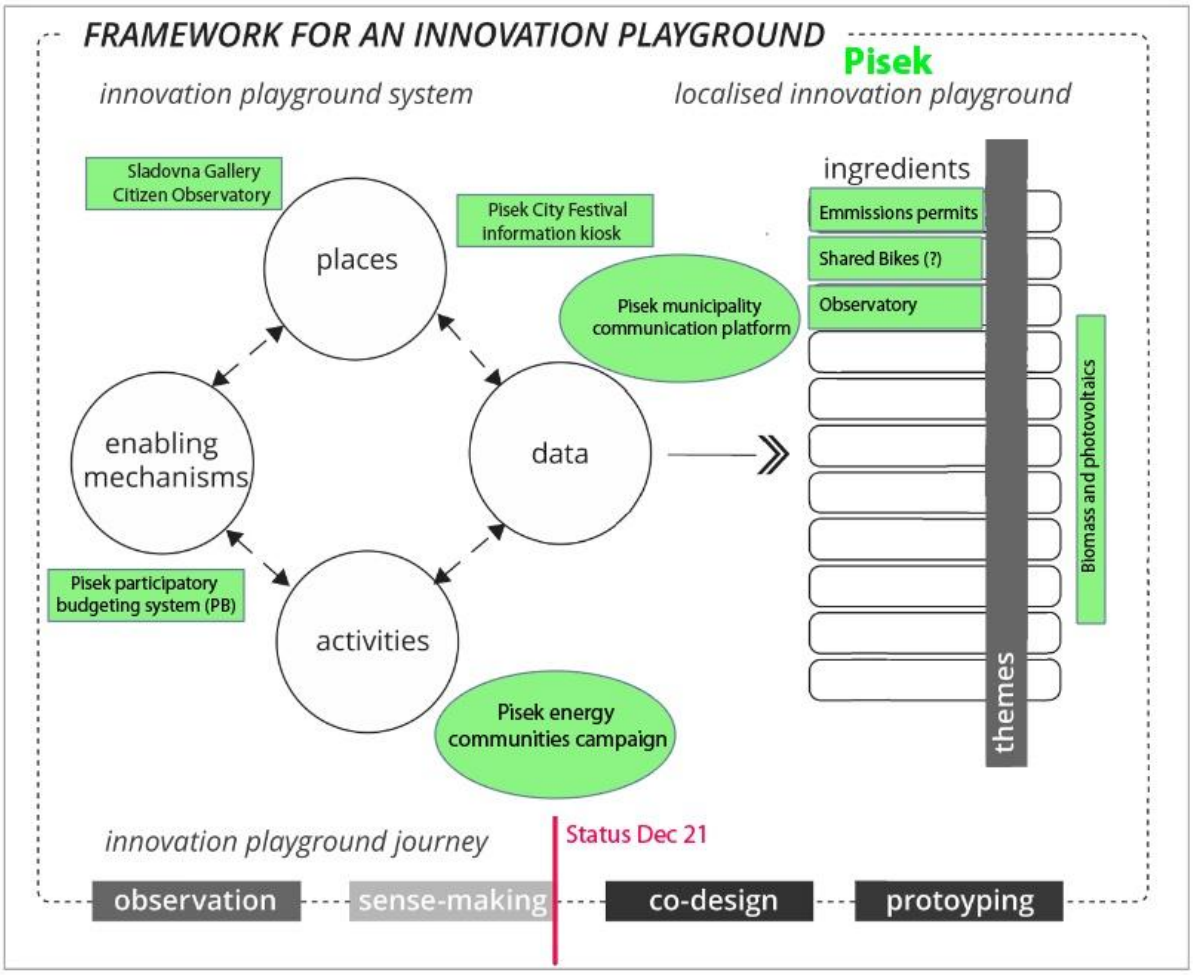



*Figure 5.2 Písek Localised Innovation Framework, Dec 2021, Image Source: Space Engagers*

The boundary outline of the Innovation Playground of Písek changed considerably during implementation, from a smaller, more local outline in line with the DA to the west of the historic city centre (April, 2020), to a larger footprint including residential neighbourhoods to the east (October, 2020), and then a boundary which coincides with the municipal boundary of the entire city of Písek (December, 2021).

The reason for expansion of the line was to fulfil Smart Písek's major goal to improve the daily life of citizens and other entities. In order to achieve these objectives, we have to explore new kinds of collaboration in urban development and look for the collective impact of investment. With the Community Energy notion, we believe to be able to finally fully involve local entrepreneurs. Future cities must be an economic ecosystem in which people and players are motivated by the city's overall competitiveness.

We started collaborating with a local voluntary association Water and Greenery. Moreover, it is planned to get this association involved in the Department of Environment here in Písek so that we could take part in some of the major decisions regarding the future of our city. Concerning the concept of Community Energy, we realised this will be our major focus this year (2022). The prices of electricity have gone tremendously up and people are looking for

alternative solutions which gives us a huge advantage. Subsequently, Positive Energy Champion videos will be linked to this topic to encourage people to take action in this matter.

| # | ID | CREATED | MODIFIED | Approved | Místo, které je třeba změnit | Projekty | Komunitní energetika | Osobní údaje | Jiné | Status | Nahrání fotografie |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 10 | 01/20/2022 7:47:17 PM | 01/21/2022 9:42:44 AM | 1 | Kontejnery na elektroodpad. Věčně rozbité jak se do nich někdo dobývá. Instalují se nedobytnější, jsou dobyty. Co to udělat obráceně? Udělat je tak přístupné, že nebude obtížné se v nich přehrabat? Funguje to u směsi, u skla, u papíru... většinou po sobě hledající ani nenechá nepořádek - vidím to denně z okna. | Zadržení vody v krajině a ochlazení města v letních měsících. Na obojí by mělo mít město dlouhodobou koncepci a stálého odborníka (klidně outsorcovaného), který bude na její realizaci dohlížet. | Ano | | vytvořit "sdílnu" - loni to myslím bylo v PARO, místo, kde by si lidé mohli a) obrobit nějaký materiál na velkých strojích pod odborným dohledem či něco opravit b) mohli si vypůjčit nějaké ruční nářadí (podobně jako v půjčovnách nářadí) a použít ho buď doma nebo přímo ve sdílně. V zahraničí možná i u nás již tento koncept existuje. Propojí komunitu, podpoří recyklaci, může využít řemeslných zkušeností lidí v důchodovém věku s dostatkem času. | | |
| 1 | 15 | 02/08/2022 1:06:09 PM | 02/08/2022 1:06:18 PM | 1 | Města se neustále proměňují a technologie jdou rychle kupředu. Tento vývoj za sebou zanechává stopy v podobě opuštěných | Spoustu opuštěných starých budov, které by se daly využít pro sblížení komunity v Písku. Chybí tady nějaké zábavné atrakce jako například zábavní park, zážitkový science park, jump park, bobová dráha, minizoo, Cinestar kino, Aquapark, nebo i sportoviště | Ano | - | Na tyto opuštěné budovy při rekonstrukci dát solární panely. | | |

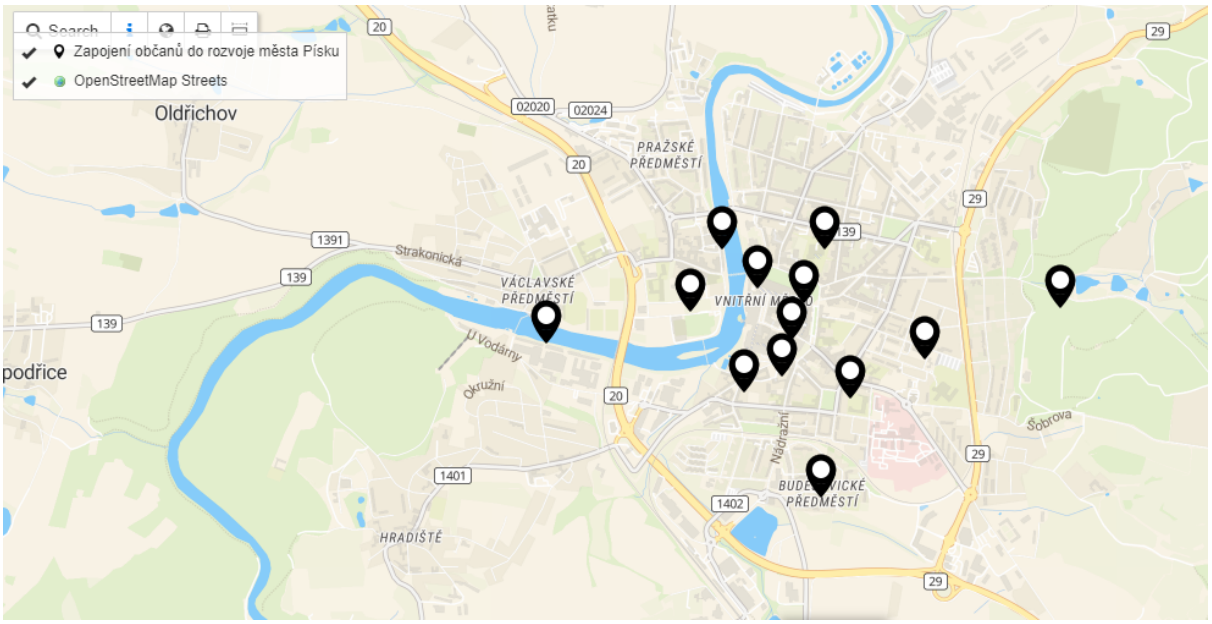



*Figure 5.3 Test Community Mapping website, and sample responses, November, 2021 Source: Space Engagers.*

## 5.3.4 Implementation Results Písek Innovation Playground

The implementation results of Písek Innovation Playground can be categorised into achievement of aims in relation to four aspects: Purpose, Outputs, Outcomes and Performance of Písek Innovation Playground.

| Achievement of the Purpose of the Písek Innovation Playground can be measured in terms of: |
|---|
| Písek Innovation Playground **brings different virtual and physical places and activities related to inclusive and open innovation into a coherent structure.** Písek has recently launched a mobile app called "Můj Písek" whose main goal is to improve the city's communication with its citizens and to provide constant up-to-date information about events in the city. With this application, you are not only a passive recipient of information, but you become an active co-creator of its content. |
| Písek Innovation Playground **facilitates collaboration,** including between citizens, research institutions, local government, state agencies, businesses and civil society organisations. The citizens observatory - Sladovna allows the direct interaction between citizens and city. Communicating with relevant ministries (Ministry of Regional Development, Ministry of Environment, Ministry of Industry and Trade) and the Union of Towns and Municipalities of the Czech Republic. Sector concepts for individual areas (IT, Energy and living environment, Mobility) following the Blue and Yellow Book were created during the implementation of the project "Development of Smart City Písek" and are one of its main outputs. |
| Písek Innovation Playground **empowers citizens** to actively participate in processes of change. For example, during 2020 and 2021 Písek focused on communication with the private sector and citizens. It led to better connection with schools, communities and stakeholders in the city. We are trying to pursue active citizenship and to show an interest in the surroundings and an effort to understand the needs of the citizens. Here **Písek** could highlight community energy. |
| Písek Innovation Playground **helps to find new, relevant and effective ways of addressing challenges that matter to people.** The mobile app was mentioned and besides that Písek tries to communicate with the locals during various events that we organise throughout the whole year. We always make sure that we get feedback which enables us to move forward and fulfil the citizens' needs and wishes. |

| Achievement of the Outputs of the Písek Innovation Playground can be measured in terms of: |
|---|
| Písek Innovation Playground helps the **engagement** of a broad cross-section of citizens and other stakeholders in activities related to their place and local issues. Písek also has local stakeholders and associations that, in cooperation with the Municipality, organise local events open to the community where everyone can discuss the future of Písek city. Namely, it is for instance, Water and Greenery Písek or Active Písek. The first association is more focused on the city's environment while the second one targets active citizen participation. Smart Písek works and closely supports these two society unions. |

| |
|---|
| Písek Innovation Playground **helps citizens and other stakeholders to feel empowered** and able to influence their place and change things. All the relevant local stakeholders were engaged in the Písek Smart City Strategy elaboration (to Dec 2021). Smart Písek tries to actively involve both the community and the stakeholders and to emphasise local value to both of these groups, seeking positive cycles of collaboration (where actors form further collaborations). Písek stimulates co-creation processes so Písek can hear their concerns and feedback, and thus shape investments and public policies. |
| Písek Innovation Playground **helps progress in relation to UN Sustainable Development Goals** and the Low Carbon Transition. The physical places (Sladovna, City Festival Kiosk as virtual (facebook, web) are platforms to communicate the SDG and Low Carbon Transition through practical examples of Smart City Interventions planned within PEB and therefore motivate citizens mimicking the example of the city. |

| Achievement of the Outcomes of the Písek Innovation Playground can be measured in terms of: |
|---|
| Písek Innovation Playground **enables new ways of doing things**, for example through public hearings with relevant groups of people, where the public gets answers to their questions. Motivation by example. |
| Písek Innovation Playground **enables new partnerships** such as creating collaborative platforms around common themes, such as with Water and Greenery where the city creates a common environmental analysis of the city, so that they have a common ground for discussion. Providing opportunities and data is important. |
| Písek Innovation Playground **enables (new) places (of innovation),** partly through willingness to understand each other's positions. Sharing pros and cons from the very beginning with all the stakeholders and the citizens. Being honest. Motivated and inspired citizens or other stakeholders would like to expand Písek Playground |
| Písek Innovation Playground **enables (new) tools and activities (of innovation).** Participatory budgeting and Climathon, examples of this, have the potential to spark new ideas for various innovation tools and activities, instances of serendipity and network effects. Having a meeting place where the city can identify responsibilities and determine what changes participants hope to affect is important. |

| The Performance of the Písek Innovation Playground can be measured in terms of: |
|---|
| Under Písek KPI 30 ('number of **innovation labs/playgrounds contributing to the creation of DBEP'**) the City of Písek owns and manages more than 200 buildings by itself or through its organisations and has always taken an active approach to energy management in important and energy-intensive buildings, especially in schools, cultural and sports facilities. EPC projects are implemented in a total of 21 different city buildings, and the city is also preparing a conceptual solution for energy management in terms of personnel and technology (implementation of an energy management system and ISO 50001 certification). |
| Písek metrics related to the different stakeholders engaged include **the city's cloud platform** for the centralization of computing technologies, a new Information System (hereafter referred to as IS), which represents a fundamental modernization of the existing IS, increasing the availability and flexibility of the city's communication and information systems and infrastructure, and will be a fundamental IS for connecting the centre of shared services and the concept of a smart city in Písek. |
| The new **Electronic official board application system** (hereafter referred to as the ECJ) fulfils measures within the framework of the development, modernization and increase of the availability of communication and IS infrastructure to the public. The system fulfils the modernization of existing supporting IS in the field of electronic file service, document management system and in the field of public relations management. The Official board system consists of 7 physical electronic interactive screens (installed on street) enabling us to display different content and outreach to stakeholders outside of social media and printed media. The screen is within the reach of 1000 people a day. As well as fullscreen posters, users can also explore City Council decisions and other content... |
| The new **Information System (IS)**, is focused on the area of managing relations with citizens. With its functions, it can fully replace the existing system for crisis management. It ensures direct communication with citizens and uses mobile technologies. In the future, it is an essential part of the modern office. |
| The **Information platform for general topics of the city** is a new application enabling the transmission of data interpretation (presentation of spatial information) in an understandable form via the web and mobile devices. It is a practical tool for various phenomena of urban agglomerations with potential for network effects. |
| The **communication platform for citizens** is a new complex IS with a robust technological architecture focused on integration with other IS, city data sources, selected third-party systems, automatic data collection and automated publishing to users, foregrounding flows of data between actors in the ecosystem. |

| Písek innovations that emerge: |
| --- |
| **Energy Center Písek - the sludge disposal processing facility** - 3580 to 3900 t/year of mechanically dewatered sludge from the Písek WWTP will be disposed of in the facility, 250-700 t/year of biomass, mainly in the form of wood chips, will be used for co-incineration. The dried sludge is then burned together with the biomass in the boiler. The output of the facility will be ash in the amount of 360 t/year. |
| Evident **qualitative and quantitative changes in Písek** include mobile app "Můj Písek, Nextbike, smart parking, electric buses, smart bus stops, smart displays by bus stops and creating energy communities. Also, citizens engagement in city matters through participatory budgeting |
| **Písek replications** (WP8, Scaling-Up, Replication and Exploitation),<br>Taking part in international programmes and partnerships that can provide solutions such as CRAFT or URBACT. For example, the Climathon or "Green Walls" : Their principle is that a medium (substrate, water-soaked substance, etc.) is attached to the wall, and living plants grow from this medium, often several species, which form interesting colour patterns. Another example: Climatologist of the city of Písek - The purpose of the project is for the city to learn how to effectively take care of the climate in its inner and outer areas and mitigate the negative phenomena associated with current urbanisation as much as possible. |
| **Písek dissemination and communications** (WP10, Dissemination and Communication).<br>Various platforms virtual (facebook, web) and physical Sladovna, Kiosk are used to communicate Smart Písek goals. Whatsapp group for community energy. Being open to community involvement. We are organising Earth Day in late April to publicly present our goals and objectives. There will be all kinds of generations involved - children, parents, grandparents. Going to where these people are- schools, gatherings, etc. |

## 5.4 Písek Innovation Playground Conclusions

Conclusions can be based on Implementation Results of Písek Innovation Playground, and can be categorised into the following four parts: 'places', 'activities', 'data' and 'enabling mechanisms'. As regards these, and in terms of places, from 2023, Písek will actively develop the construction of photovoltaic power plants on city-owned buildings. The pilot or beta project will be the construction of a photovoltaic power plant on the premises of ZŠ J.K. Tyla, it is one of the first steps the city wants to take to start the use of alternative energy sources and future energy self-sufficiency. As part of the subsidy, funds would also be earmarked for organising events for the public on current topics such as energy efficiency, the use of renewable energy sources and resistance to climate change.

As an example of another place of innovation, the city of Písek has been using a traffic navigation system since 2018. It consists of three main components: Smart parking, Active vertical marking, and Navigation portal. The navigation portal integrates data not only from

smart parking lots, but primarily displays information obtained by analysing data from the mobile operator's network. This made it possible to cover a large number of on-street parking spaces by monitoring their occupancy. These data are of high value from the point of view of traffic planning and management. This project has elements of the 'activities', 'data' and 'enabling mechanisms' parts of the Písek Innovation Playground System.

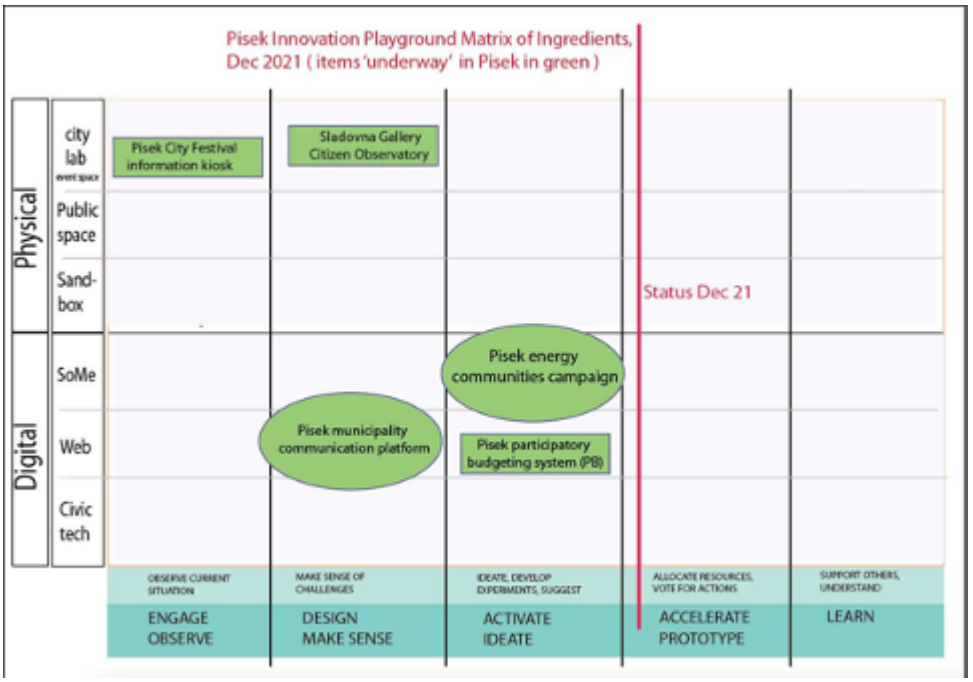



*Figure 5.4 Písek Innovation Playground Matrix of Ingredients (Dec, 21), Source: Space Engagers*

As regards Písek Innovation Playground Journey Conclusions (from observation and sense-making to co-design and prototyping), the Innovation Playground Journey in Písek moved from the 'Engage/Observe' stage (including the City Festival Information Kiosk) through 'Design/Sensemaking' (Písek Municipality Communication Platform), and 'Activate/Ideate' (Eg. Participatory Budgeting System), towards 'Accelerate/Prototype' in 2022, and beyond, including the pilot or beta project which will be the construction of a photovoltaic power plant on the premises of ZŠ J.K. Tyla.

In relation to Písek Localised Innovation Playground conclusions (Map, Ingredients, Themes), there is a mix of types of 'Ingredients' in Písek, from physical (City lab, eg. old buildings) to digital (Civic Tech, eg. parking solutions tech, smart stops, mobile app). On January 14, 2021, the strategic document SECAP: Action plan for sustainable energy and climate was submitted to the city council for approval, where one of the points of fulfilment of this document is the implementation of five pilot projects of green roofs on existing and new roofs. The Smart Písek office plans to start implementing this plan in 2023 in cooperation with the Department of Investments and Development.

Písek Localised Innovation Playground implementation results/conclusions (Purpose, Outputs, Outcomes and Performance) include examples of citizens engagement in participatory budgeting, helping to define the localised Innovation Playground - A pier at the Šarlatské pond, a pergola at the sports field in Smrkovice, a Václav Havel bench, a double ropeway for children in Semice, a mobile tribune for sports and cultural events, a memorial site at the Forest Cemetery and the planting of a fruitful draw. These are the seven projects that emerged from the second year of participatory budgeting and will thus see implementation as urban prototypes.

# 6 Sestao Implementation Report

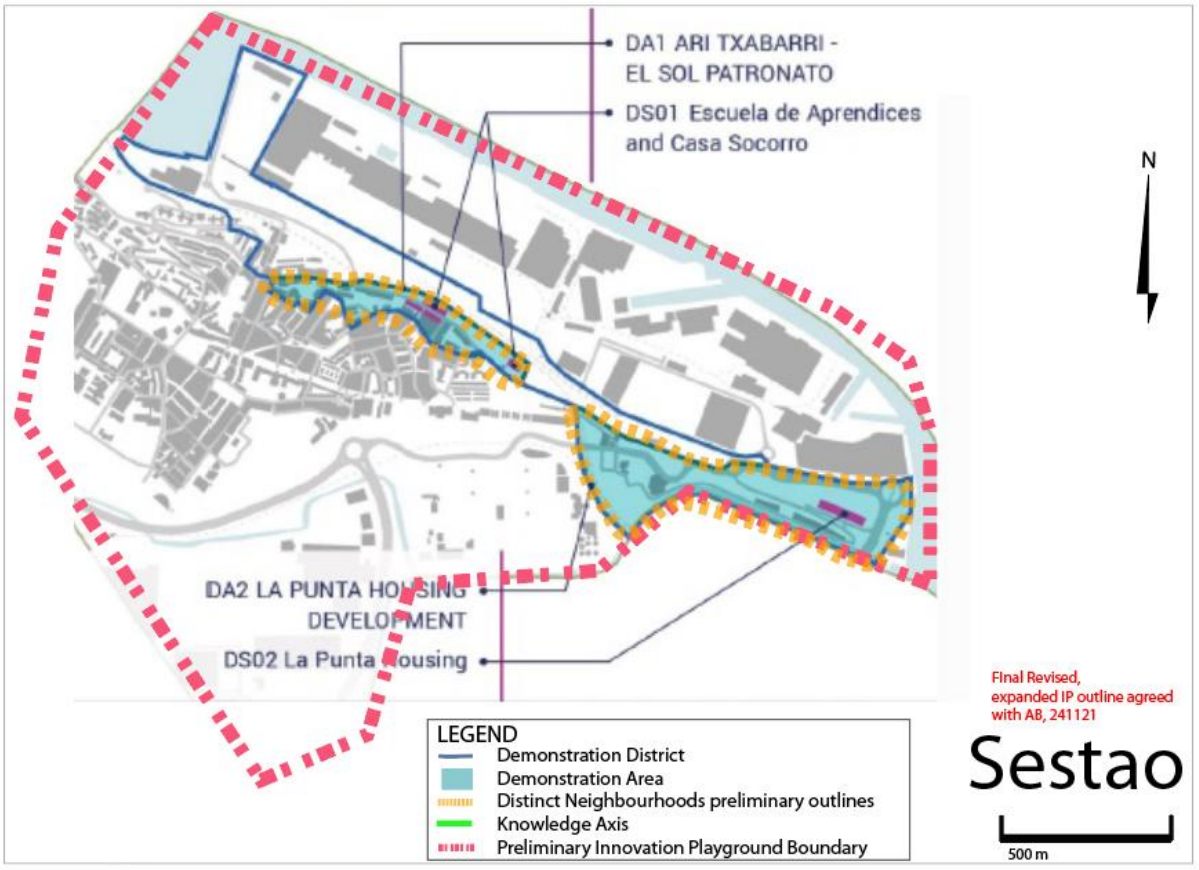



*Figure 6.1 Preliminary Sestao map of the Innovation Playground locally Source: Space Engagers, 241121.*

## 6.1 Introduction to Sestao

Community participation and Innovation Playground implementation in Sestao are characterised by the fact that citizen participation and engagement involved diverse sections of the community and municipality, and the fact that Sestao Innovation Playground has neighbouring municipalities it works closely with. Also, many big energy innovation initiatives of Sestao, such as the eight solar powered energy communities, are only expected to be bidded upon during April-May 2023.

This Report defines a spatial and socio-economic (Innovation Playground) framework for Sestao as including an Innovation Playground boundary, which coincides with the municipal boundary of the entire Municipality of Sestao, 1 PEB (close to Sestao Municipality centre), the specific Sestao 'Smart City Interventions' and an ongoing Stakeholder Engagement Plan, all within the Sestao Bold City Vision to 2050. Local characteristics of Sestao implementation include an emphasis on schools, derelict buildings and industrial sites. The overlap/link between the Sestao PEB and Sestao Innovation Playground is that the PEB is close to the industrial lands of Sestao (at the north end of the Innovation Playground) and therefore the specific geographical character of this Innovation Playground can be easily understood by

the whole Municipality. Sestao has a 'Follow and Learn' status for its DP05 Playground, which means that the +CxC Project does not oblige Sestao to implement the Innovation Playground Framework concepts.

## 6.2 Sestao Community Participation

In this section, the results of applying the approach explained in section 3 community collaboration and co-creation measures and open calendars for the case of Sestao municipality are included.

### 6.2.1 Collaborative working sessions with Sestao

Section 6.2 of 'D3.2 Delivery of the citizen participation playbook' includes the recommendations particularly defined for Sestao municipality in order to: achieve effective and inclusive community engagement, and to use the most suitable participation tools (physical and online) when developing community collaboration and co-creation activities and open calendars. Refer to this document for more detailed information.

### 6.2.2 Sestao's community collaboration and co-creation measures and open calendars

Community collaboration and co-creation measures in Sestao have ranged from collaborative legislation (Sestao Urban Agenda/BCV and Covenant of Mayors/SECAP) to open engagement events (Climathon +Energy Communities and Tourism plan).
Open Calendars are implemented by using the Sestao Mobile app called 'Sestao Zabaltzen' and, as of this writing, it is being studied to also share the open calendar on the giant LED screen located on one of Sestao´s main plazas that is also part of Demonstration Area 1.
The online web of Sestao's City Council is used for publishing the meetings and results of participatory processes.
Sestao Municipality is closely working with the following communities: schools (both students and staff), general retail/SMEs around the schools, and with corporations and public organisations. The goal is to gradually open up to any stakeholder in the city and neighbouring cities (Santurtzi, Portugalete and Barakaldo).
Next, each community collaboration and co-creation measure is explained in detail, including encountered challenges and obtained results.

#### 6.2.2.1 Sestao Urban Agenda/BCV

Sestao´s Urban Agenda (UA) was co-developed along with its Bold City Vision (BCV). The project was selected as 1 out of 111 pilot Urban Agendas in Spain.
The involved stakeholders were civil servants from all the departments of the municipality and citizens of Sestao. Civil servants were divided into three groups to brainstorm and define objectives and projects for the city to be pursued during 2030-2050. After that, citizens were invited to provide their insight. On July 26th of 2022, the UA+BCV got a unanimous approval during its municipal plenary session. Some of the projects listed are already in early stages of development.

### 6.2.2.2 Climathon + Energy Communities engagement event

Sestao's municipality invited its neighbouring cities of Portugalete and Santurtzi, to jointly organise a Climathon event spread between November and December of 2020. The Climathon was celebrated online due to pandemic restrictions.
The theme was to come up with innovative ideas/projects that could contribute in a meaningful way towards reducing $CO_2$ emissions in the 3 municipalities by 50% by 2030. Sustainable mobility, energy, construction and housing, and industry were also identified as secondary challenges.
University students, entrepreneurs, members of local associations and freelance professionals were the main participants targeted to sign up for the event. 22 ended up participating in the event.
This Climathon was considered highly relevant because it opened up the dialogue for future collaboration between the three cities. An agreement was reached between the three cities that the event would get hosted again in the future, in a revolving fashion with 1 of the 3 cities acting as the main organiser.
The project results of the runner up winner were used as an initial starting point for a current project that aims to install eight energy communities in Sestao, operating with PVs, by 2023. During 2023, community engagement events will be organised to present the energy community projects to citizens and gather feedback regarding implementation details.

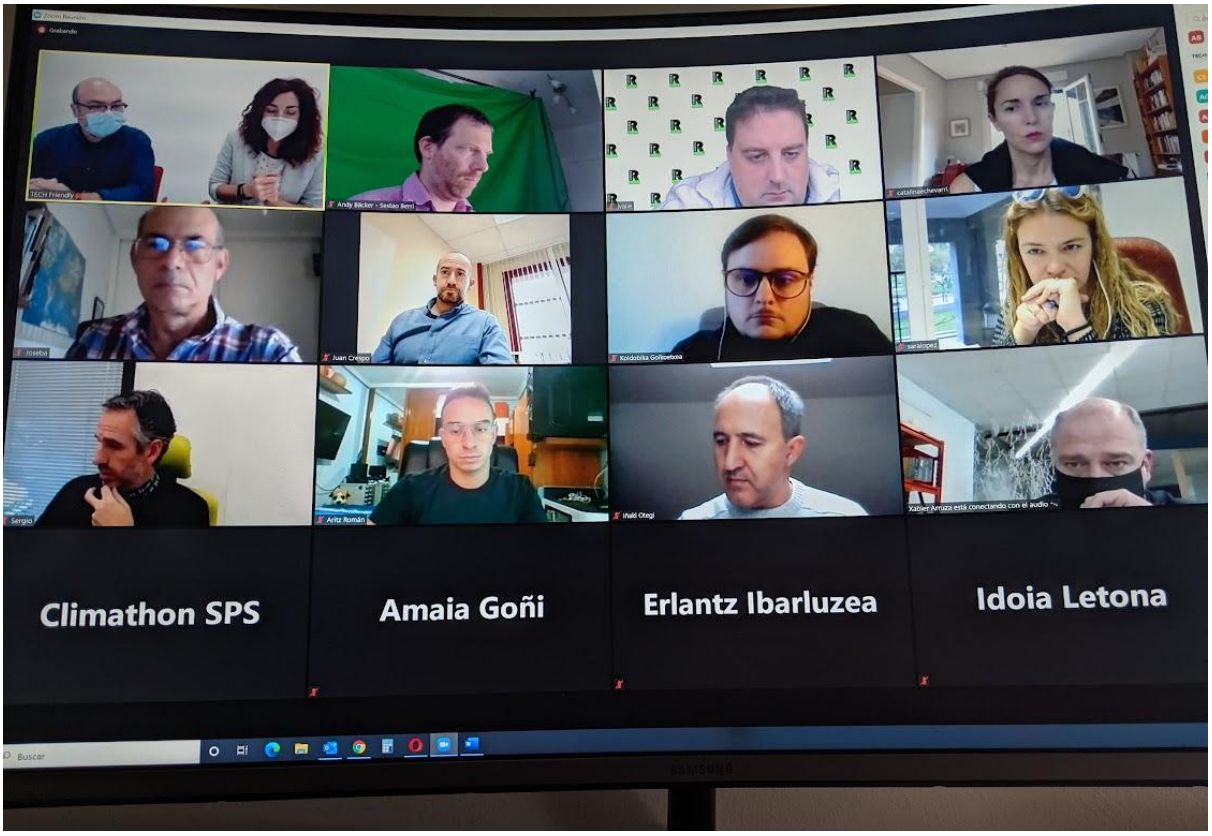



*Fig 6.1 Climathon held in virtual format during COVID pandemic. Source: Sestao Berri*

#### 6.2.2.3 Tourism plan

In November of 2022, a citizen engagement session was celebrated in order to present and discuss the draft version of the Sestao tourism plan. Sestao is an industrial city with a low tourism rate, the main exception being part of the pilgrimage route of Way of St. James. It was discussed and concluded that industrial tourism is a big potential attraction for local, regional, national and international visitors.

#### 6.2.2.4 Covenant of Mayors/SECAP

Sestao's municipality signed up to participate in the Covenant of Mayors initiative in December 2020. Sestao developed a draft of the Sustainable Energy and Climate Action Plan (SECAP). In November 2022, an open particitation session was held to engage and gather valuable feedback from citizens, local businesses and organisations regarding this draft action plan. The participatory event was well attended and generated multiple debates. The final plan was presented for official approval during the last municipal plenary of 2022.

*Fig 6.2 Citizen Engagement event presenting Sestao's SECAP on Nov. 24th, 2022. Source: Sestao municipality*

### 6.2.3 Future Projects

Future citizen participation projects are briefly described below:

- Eraikal project: a grant has been granted by the Basque Government to refurbish an unused commercial ground floor which is likely to be located within the PEB1 area. The project requires extensive involvement of citizens in order to decide the use of the space. The community collaboration and co-creation measures will be carried out during 2023.
- Uses for the Escuela de Aprendices and the Cuarto de Socorro buildings: both buildings are part of the +CxC program. In May of 2018 two citizen engagement events were organised that were participated by 341 citizens (57 online and 284 offline). The purpose was to gather proposals for potential uses for the buildings. During 2023, a follow-up event is planned to update the current status of both buildings and debate part of the use for the Escuela de Aprendices.

Additionally, there are a number of citizen participatory projects that are pending on getting funds, these are: Green Adoption Program, Green Infothons, Green Benchmark Challenge and Green Tape Challenge.

### 6.2.4 Conclusions and recommendations

Sestao's municipality has achieved a broader engagement approach including private companies, universities and other public institutions. They have done works regarding citizen participation and engagement in relation to DPEBs. In particular, Sestao has effectively engaged citizens in two collaborative legislation processes.
A list of recommendations by Colaborativa, the Lead authors of the D3.2 document on citizen participation, is included next in order to continuously foster citizen engagement and the development of PEBs in Sestao municipality:

- Sestao would greatly benefit from organising informative sessions with local communities regarding localising the SDGs, for example in developing the Eraikal project.
- Covenant of Mayors/SECAP: continuous communication is essential for increasing engagement rates and trust in Sestao's municipality. The citizens need to know how their feedback affected the city's strategic documents, such as the Sustainable Energy and Climate Action Plan (SECAP) and the Sestao tourism plan.
- We recommend to make emphasis on face to face activities such as Go & Find citizens, Narrative tours and Gamification (see D3.2 Delivery of the citizen participation playbook). These activities will improve citizen perception and trust in Sestao's municipality since they show a proactive attitude and real interest in getting in touch with them. Additionally, using these creative engagement activities together with attractive resources for topics that are less appealing for citizens will help achieving effective engagement.
- Open data: the information extracted from the open particitation sessions for the Sustainable Energy and Climate Action Plan (SECAP) and for the Sestao tourism plan needs to be shared publicly ensuring the privacy of the citizens. This will help gaining credibility by the community, and to be reused by other institutions or communities. It would be of great help to foster citizen participation to share all this information as open data.

## 6.3 Sestao Innovation Playground

Sestao has signed the Covenant of Mayors Agreement (Dec. 2020) and the municipality has officially committed to become carbon neutral by no later than 2050. In this context, five relevant initiatives of the Sestao´s Innovation Playground are : 8 PV operated energy communities, do energy efficiency + renewable energy focused refurbishment on 4 major municipal buildings ('urban prototypes'), install electric e-chargers and incorporate e-vehicles into the municipality´s vehicular fleet (a beta project), renew all public street lighting to LED and install an energy monitoring municipal digital platform.

### 6.3.1 Sestao Innovation Playground System

Sestao´s Innovation Playground is largely focused on acting as a test bed or urban prototype for enabling people/entities in Sestao to know how sustainable they are and how specifically they can improve. The main place of engagement is the city itself, defined by the municipal boundary. Activities in Sestao related to innovation include those described in the Community collaboration and co-creation measures Section above, which take place mainly within the Innovation Playground. For example, meetings with the public take place in municipal buildings, schools, businesses and town plazas and the local theatre. Enabling Mechanisms of the Innovation Playground in Sestao include the Sustainability Wiki, which is to be built by programmers, sectoral actors, citizens and the city.

#### Sestao Places

This Section locates places of the Sestao Innovation Playground, including schools and the industrial heritage site around the Alto Horno.

The neighbouring cities of Santurtzi, Portugalete and Barakaldo have preliminarily agreed to participate in this project along with Sestao, so places of the Innovation Playground could grow substantially in the near future. The major initial push will be to get as many schools as possible, in these four cities, to participate. That will be followed by attracting the participation of the student´s and the school´s staff´s households, and then followed by general retail/SMEs around the schools. Eventually, corporations, public organisations, etc., might be subject to taking part in this project. Other Basque, Spanish and international cities will hopefully also partake. (Based on recent talks, the Basque Government has shown initial interest in the deployment of the sustainable wikipedia on all the Basque territories).

The energy communities of Sestao are a 'place' of the Innovation Playground. The eight solar powered energy communities of Sestao will be on parking lots, over footpaths, and on roofs of municipal buildings. In relation to the PEB, the five buildings in the two Demonstration Areas (DA1 is more the focus, as it is made up of public buildings) are a priority to connect to the energy communities, which will be located less than 1km away. They can supply renewable energy to the buildings directly or through virtual (trading) links. Some of these buildings are also connected to the biomass-powered district heating, which can supplement energy in a flexible market.

#### Sestao Activities

This Section briefly records activities of the Sestao Innovation Playground which are more fully described in the Community Participation Section of this Report, including:

- Organize community events within the Innovation Playground so as to present the overall project (fundamental concept to convey: one´s sustainability level is also affected by the sustainability levels of the third parties that we are engaged with).

Organize community events to help define and weigh the impact of sustainable actions that will be included in the digital platform that scores sustainable performance for businesses, citizens, public entities, etc.

Get as many schools in Sestao to participate in the program and measure how sustainable they are currently being and nudge them to commit to engage in continuous improvement.

Get as many students and staff within the participating schools to measure how sustainable they, in terms of their lifestyle and their households, and nudge them to commit to engage in continuous improvement.

Get students, participating in an optional sustainability class, to ´adopt´ local SMEs (bakeries, restaurants, bars, beauty salons, car workshops,...) and get them to measure how sustainable their professional activity currently is and nudge them to commit to engage in continuous improvement.

Organise sessions with sectoral clusters and associations to create initial lists of sustainable improvements for multiple professional sectors. (These will later on get expanded significantly with the participation of research centres, universities, corporations,...).

### Sestao Data

This project in relation to data can be broken down in two parts: The first one is the Sustainable Wikipedia that has as a main objective to gather as much sector specific sustainable solutions for as many professional activities as possible as well as sustainable lifestyle. A €66,400 grant by the Basque Government has been awarded for this project and it includes a budget for presenting it to a EU project. The second part is aimed at measuring the sustainable level of businesses, lifestyles, products, etc. It is pending the receipt of funding. The measurement happens by measuring, voluntarily, in real time (wherever possible thanks to smart meters) energy, water, fuel consumption, measuring number and types of sustainable implementations and analysing the sustainable level of one´s ecosystem (suppliers, workers, clients, neighbourhood, etc.).

It is considered that in generating both types of data, the sustainable wikipedia and the measuring of sustainable performance are both highly innovative. The Sestao team hasn't found any platform that helps to find in a high level of detail, a breakdown of sustainable practices, products, etc. that a baker, a hairdresser, a school, a supermarket, a water purification plant, a steel factory, a citizen, etc. that they can incorporate into their activity as to make them more sustainable. Nor was an existing product found that helps measure the sustainable levels of products, entities, lifestyles, cities, etc.

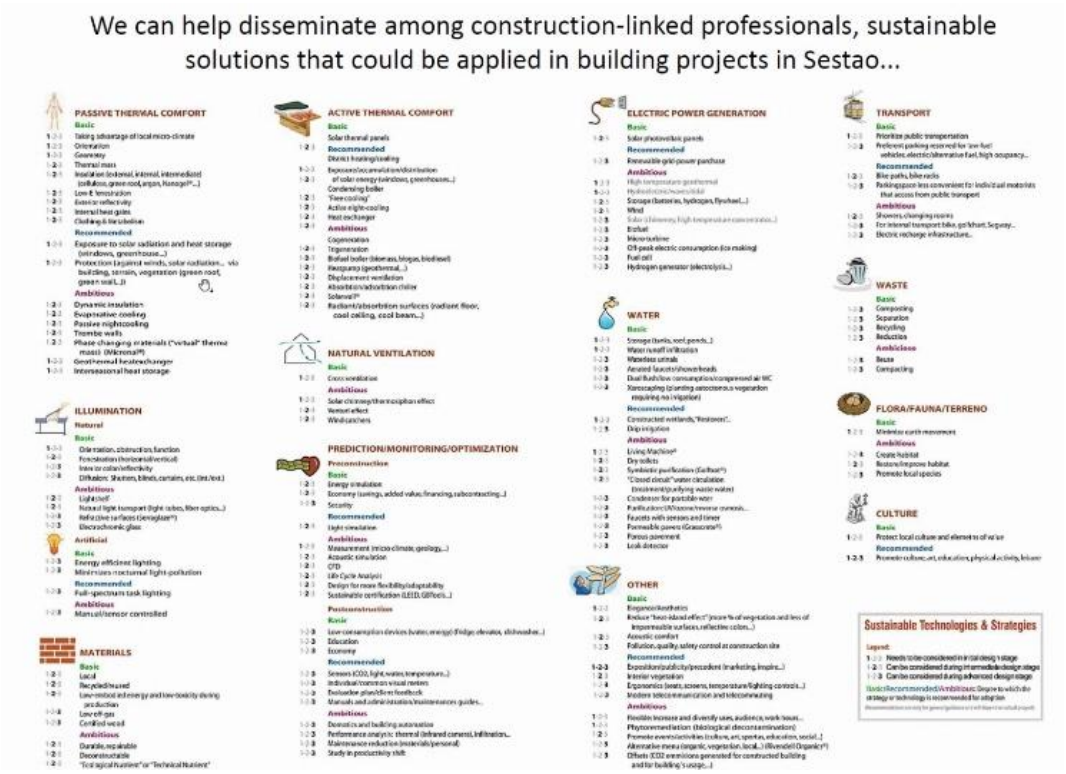



*Fig. 6.3 Sestao (Construction) 'Sustainability Wiki' sample Page. Sestao municipality*

## Sestao Enabling Mechanisms

Local enabling mechanisms in Sestao include:

Creating a type of ´sustainable wikipedia´ that allows to search and find all sorts of sector-specific, as well as lifestyle, sustainable solutions is already included as a project to be implemented in Sestao´s Urban Agenda/BCV document. Different sectors (banks, construction, hairdressing, etc.) come together to co-fund, discuss and agree how to collect sector-relevant knowledge to make each sector more sustainable. The hope is to scale this sustainability and energy innovation concept to other municipalities across Basque country and Spain, and beyond.Talks are ongoing with the Basque Government as to implement the proposed solution at a Basque Country level. It may also be presented to scale up as a EU project.

Sestao is a member of the sustainability and circular economy focused ECCUS HUB (other members include Iberdrola, Vodafone, EDP, the cities of Seville, Gigón, etc.). This hub might be interested in adopting some of the projects that Sestao is engaged with in order to implement them at the member´s corporations and cities..

Sestao is a Covenant of Mayors Signatory and has officially pledged to be carbon neutral by no later than 2050.

Preliminary agreements have been reached with the neighbouring cities of Santurtzi, Barakaldo and Portugalete as to have their own schools participating in the project to

measure how sustainable the schools are and nudge students, local SMEs (with the help of the students), etc., to become more sustainable.

### 6.3.2 Sestao Innovation Playground Journey

As regards steps to support the acceleration to a positive energy city which involved adaptation to local conditions (or localisation) in Sestao, in early stages, multiple options were considered for the Innovative Playground until the idea of working with schools came up. That evolved to the idea of having the students and the staff expand the playground to their homes and lifestyles. And in turn, that also expanded to getting the students to engage with the local SMEs/retail shops and eventually opening it up to virtually any stakeholder/location in the city and inviting neighbouring cities to also join in. In parallel, there are talks underway with the Basque Government to have the Escuela de Aprendices building be part of the sustainability education centres network (Ekoetxeas network) that is currently comprised of 4 centres. This would add a fifth centre and it would be the first one within an urban and industrial context.

This made the Journey of the Innovative Playground more clear and more urban and local. In the future, it is hoped the grant (in the worth of 260.000€) that was applied to IDAE (part of the Central Government) for opening an office with the objective of furthering energy communities (by bringing awareness, providing information about the technical/legal/economical aspects, etc.) will help accelerate the adoption of energy communities. If granted, this office might be located centrally within DA1, thus giving a 'centre' to the Sestao Innovative Playground.

### 6.3.3 Sestao Localised Innovation Playground

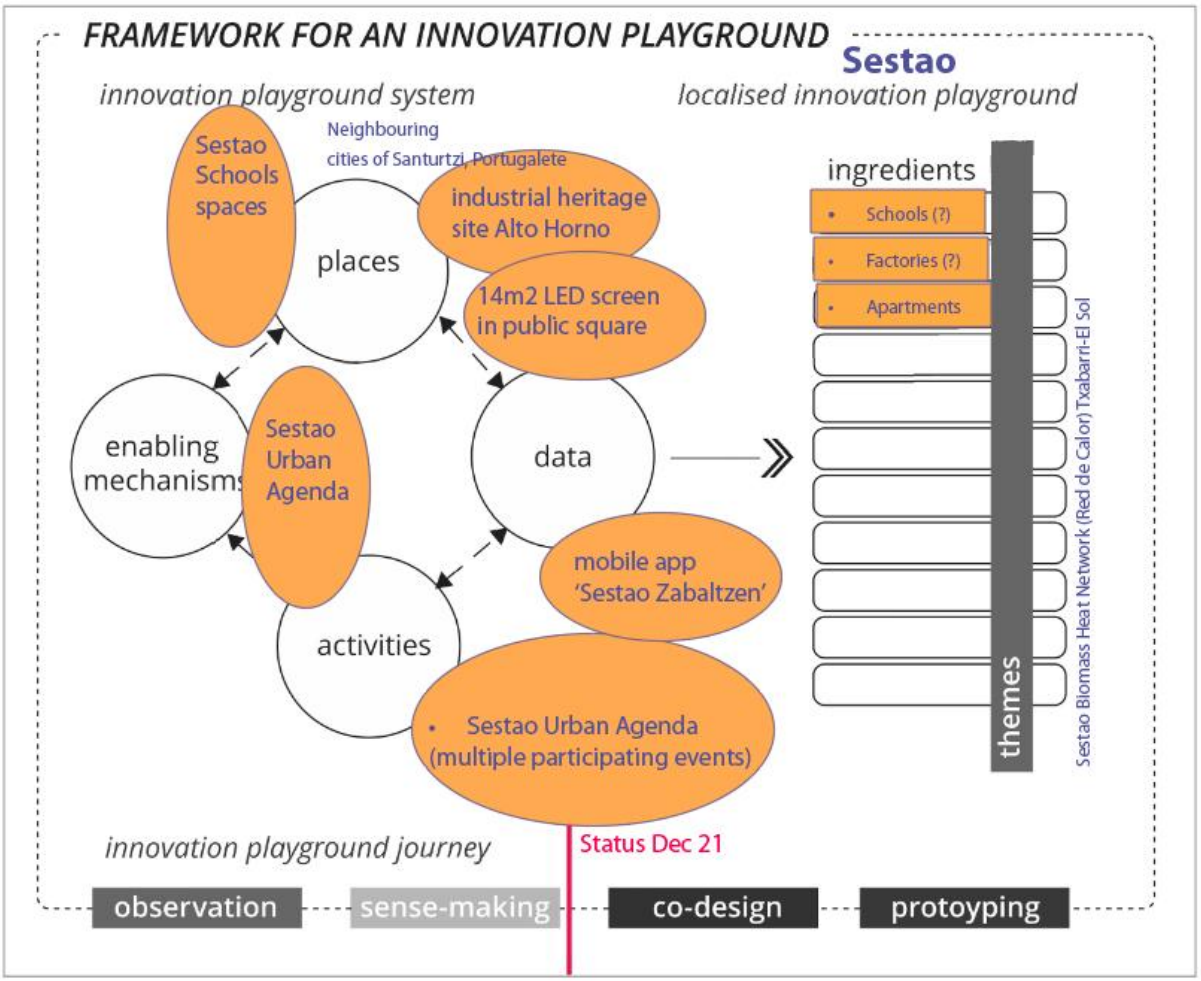



*Fig. 6.4 Sestao Localised Innovation Framework, Dec 2021, Image Source: Space Engagers*

In relation to localising the Innovation Playground concept, there have been Innovation Playground boundary changes during implementation, from a smaller footprint to the larger 'all of Sestao' inclusion.

At an early stage, the footprints of the actual schools that would end up participating would delimit the playground´s boundary. This boundary then also developed to encompass the homes of the student´s/school workers participating, later SME´s/retail shops around the schools taking part and eventually the whole boundary of Sestao, as a potential area for innovative playground interaction. In the future, the hope is that it can eventually lead to including all of the four neighbouring cities. Leaving it open to expand further is positive, especially once the playground is fully operative.

### 6.3.4 Implementation Results Sestao Innovation Playground

The implementation results of Sestao Innovation Playground can be categorised into achievement of aims in relation to four aspects: Purpose, Outputs, Outcomes and Performance of Sestao Innovation Playground.

| Achievement of the Purpose of the Sestao Innovation Playground can be measured in terms of: |
|---|
| The Sestao Innovation Playground **brings different virtual and physical places and activities related to inclusive and open innovation into a coherent structure.** For example, the roadmap of the Framework document was applied to bring places, mechanisms, data and citizens together to expand energy knowledge for the future. The Wiki initiative is a working example of this. |
| Sestao Innovation Playground **facilitates collaboration**, including between citizens, research institutions, local government, state agencies, businesses and civil society organisations, well demonstrated in the BCV/Urban Agenda initiative and events, development of the documents contents, and locating an event in Escuela de Aprendices. |
| Sestao Innovation Playground **empowers citizens** to actively participate in processes of change, for example in the development of the eight energy communities, promoting positive cycles of collaboration (where actors form further collaborations). |
| Sestao Innovation Playground **helps to find new, relevant and effective ways of addressing challenges** that matter to people, such as, for example, in seeking grants to alleviate energy poverty in a regeneration area in the Innovation Playground. This could include a local office for citizen engagement in the Vista Alegre neighbourhood. |

| Achievement of the Outputs of the Sestao Innovation Playground can be measured in terms of: |
|---|
| Sestao Innovation Playground enables new ways of doing things. For example, consumption of fossil-fuel-based energy gets reduced with the involvement of the energy community and the introduction of biomass district heating. The way the Municipality works and engages in relation to energy has also developed. |
| Sestao Innovation Playground enables new partnerships. There are many of these, from building owners, adjoining municipalities, funders, the Basque Government, and with private citizens, whether building owners, people renting, etc. New connections and communications with NGOs are another positive feature of the initiative in Sestao. |
| Sestao Innovation Playground enable (new) places (of innovation). The eight energy communities (and their planned future local public offices) will manifest the changes, and the Demonstration Areas are already associated with positive energy generation. |
| Sestao´s Innovation Playground enables (new) tools and activities (of innovation) including mapping, Climathons, Wiki content generation, and energy community participation, with the help of the municipality. |

| Achievement of the Outcomes of the Sestao Innovation Playground can be measured in terms of: |
|---|
| Sestao Innovation Playground **helps the engagement of a broad cross-section of citizens and other stakeholders** in activities related to their place and local issues. For example, sectoral interests in the Wiki page, schools and other stakeholders, industrial actors in Sestao, are all involved in the conversation around energy efficiency and renewable energy in the Innovation Playground, in crowd-solving mode. |
| Sestao Innovation Playground **helps citizens and other stakeholders to feel empowered** and able to influence their place and change things. An example of this is the inclusive citizen and sector level inputs and communication around the Sustainability Wiki. |
| Sestao Innovation Playground **helps progress in relation to UN Sustainable Development Goals and the Low Carbon Transition.** For example, the plan to add solar panels to the ArcelorMittal building, which is a collaborative move by the owners and the municipality. |
| Sestao Innovation Playground **enables new ways of doing things.** For example, consumption of fossil-fuel-based energy gets reduced with the involvement of the energy community and the introduction of biomass district heating. The way the Municipality works and engages in relation to energy has also developed. |
| Sestao Innovation Playground **enables new partnerships.** There are many of these, from building owners, adjoining municipalities, funders, the Basque Government, and with private citizens, whether building owners, people renting, etc. New connections and communications with NGOs are another positive feature of the initiative in Sestao. |
| Sestao Innovation Playground **enables (new) places (of innovation).** The eight energy communities (and their planned future local public offices) will manifest the changes, and the Demonstration Areas are already associated with positive energy generation. |
| Sestao´s Innovation Playground **enables (new) tools and activities (of innovation)** including mapping, Climathons, Wiki content generation, and energy community participation, with the help of the municipality. |

| The Performance of the Sestao Innovation Playground can be measured in terms of: |
|---|
| KPI 30 ('number of innovation labs/playgrounds contributing to the creation of DBEP') The current status/potential of introducing an **Innovation Lab in Sestao** (in Feb 23) is that the conversation is ongoing, but no specific location is decided. However, local offices which |

| |
|---|
| provide information to the eight energy communities are planned, and could house some of the functions of an Innovation Lab in the future. |
| Metrics related to **stakeholder engagement** in Sestao Innovation Playground are available in reporting on KPIs, and show sustained engagement with a range of stakeholders and citizens. Performance of the Innovation Playground in this sense mainly relates to BCV and Agenda Urbana public communications and events, Climathon and schools engagement. |
| **Innovations that have emerged in Sestao** include the work with schools around the Sustainability Wiki, the 24/7 360º sustainability scoring system, the dual charging of EVs (from the Trondheim example), street lights with PVs, among others. In Spanish terms, the way the four municipalities (and their citizens) engage informally in this project on positive energy and sustainability is an innovation. |
| **Evident qualitative and quantitative changes in Sestao** include more public conversations and initiatives on sustainability, leading to a qualitative benefit for the city. Quantitative changes, by the end of the Project, could include the eight energy communities, renovation of four municipal buildings, 8 Ev chargers + 8 e-vehicles, introduction of a municipal digital energy monitoring platform and the Wiki operating. |
| **Replications in Sestao** are more fully described in WP8, Scaling-Up, Replication and Exploitation. For example, the Climathon format was retested in the local event, and the dual charging stations of Trondheim are due to be tried again in Sestao. |
| **Microtrading between energy production and use** (reusing the Iota tool) is a long term aim to replicate, possibly at a photovoltaic generation location. |
| **Dissemination and communications** of the Sestao Innovation Playground data was generated and shared for local stakeholders and businesses, through BCV, Urban Agenda and Climathon, among other events and initiatives. |

### 6.3.5 Sestao Innovation Playground Conclusions

Most likely the most valuable lessons from implementing the Sestao Innovation Playground await to be learned into the future. It's likely that we are overambitious with our focus but, if a small percentage of the big ambition ends up materialising, that will still very likely be a very big success overall out of which many valuable lessons will be learned. In case things work out minimally as planned, this initiative has the potential to create a significant positive impact for the planet.

Key conclusions can be based on Implementation Results of Sestao Innovation Playground, and categorised into three parts : System, Journey, and Localisation. In terms of Sestao Innovation Playground System conclusions, 13.7m euros was an assessed cost initially, but was re-appraised after return on investment periods were taken into account. The lesson learned was in relation to understanding ESCO business models primarily in relation to return on investment periods. In terms of Sestao Innovation Playground Journey

conclusions, the geographical scope of the Innovation Playground changed quite a lot during the Project, from a local (schools based) definition, to a wider inclusion of the entire municipality. The lesson learned was that all citizens, SMEs, etc. can be included in the conversations if the ambition is raised with the organisational capacity. As regards Sestao Localised Innovation Playground conclusions, one lesson about localising the Framework for Sestao, is to watch other cities as they progress, and record for example the 'operations' of Innovation Labs as they get up and running, so that when the local version happens in Sestao, learning can ensue.

For other cities implementing a Localised Innovation Playground, and for the EU Commission to consider how to benefit from the localised learning experience in future energy projects, some comments on conclusions and learnings from Sestao include the following ones. As a city with a history based on heavy industry, Sestao has had to pivot towards sustainability, and concepts such as industrial tourism are beginning to be relevant locally. The combination of this concept with an energy transition and sustainability emphasis, promoted by the +CxC project positions Sestao well for future innovation initiatives. Remaining ambitious for the Innovation Playground was important throughout, so while Sestao had a "Follow and Learn' approach, the aim to become a leader nationally in the area was helped by involvement in the Project.

Furthermore, methods of working within the municipality can be 'disrupted' by projects like these, but the presence of this energy and sustainability project within those systems helped generate an environment for more focus on these topics. The concept of the Sustainability Wiki helped to present Sestao and the Region as a more 'digital innovation centred´ area, which helps to attract funding and innovation around sustainability and positive energy in the future.

# 7 Smolyan Implementation Report

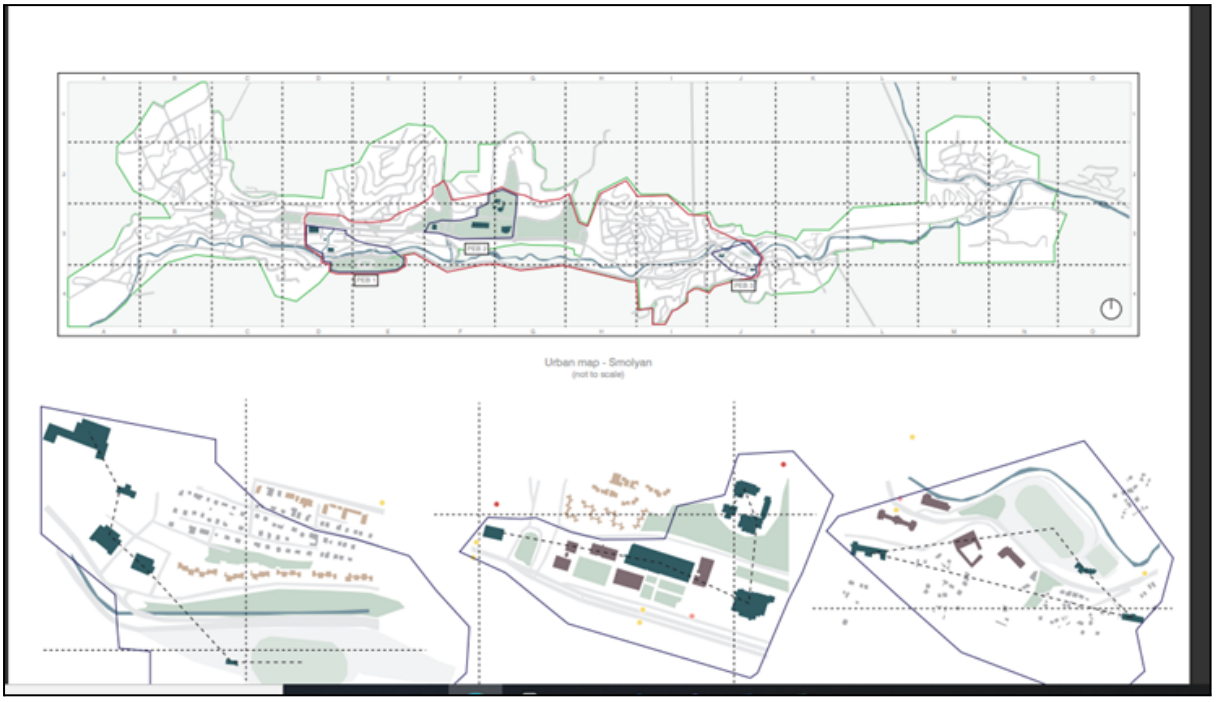


*Fig 7.1 Smolyan Innovation Playground official mapping (Interim, 2022). Source: Smolyan municipality*

## 7.1 Introduction to Smolyan

Community participation and Innovation Playground implementation in Smolyan are characterised by effective engagement of citizens in collaboration and co-creation activities, stakeholder diversity and building capacity through participation, always focusing on the SDGs , and the fact that the 'character' of the Smolyan Innovation Playground includes multiple centres, and a strong overall identity in the municipality.

## 7.2 Smolyan Community Participation

In this section, the results of applying the approach explained in section 3 community collaboration and co-creation measures and open calendars for the case of Smolyan municipality are included.

### 7.2.1 Collaborative working sessions with Smolyan

Section 6.2 of 'D3.2 Delivery of the citizen participation playbook' includes the recommendations particularly defined for Smolyan municipality in order to: achieve effective and inclusive community engagement, and to use the most suitable participation tools (physical and online) when developing community collaboration and co-creation activities and open calendars. Refer to this document for more detailed information.

### 7.2.2 Smolyan's community collaboration and co-creation measures and open calendars

Community collaboration and co-creation measures in Smolyan have ranged from public engagement events such as events dedicated to the development of the BCV such as "City Engage Month " and City lab "Vision of young people for the future of our city". Smolyan municipality has organised different workshops with children and young people, part of the Next Generation Smart Citizen, such as several "Open lessons about energy with Horizon energy Kit" and "Climate fresks", Climathon 2021 and "Building the city of the Future". They have also celebrated open days events and informative sessions regarding the concept of DPEB, with events like "The Open Days of Sustainable Heating and Construction", PED Talk "Creating Positive Energy Buildings and Communities" and Regional Round Table "Air quality in Smolyan and the Region". Additionally, a community mapping event was held in June 2022. The Municipality has worked hard on the establishment and promotion of Smolyan's first Citizen Observatory "Sky hub Smolyan". In the first years of the +CxC project, the citizen engagement was impacted by the Covid-19 restrictions, limiting them to mainly outdoor activities such as the narrative tour "Photo Voice". The lifting of the restrictions has allowed the municipality many opportunities to engage with its citizens in-person and through online-based campaigns. The Municipality will continue to strive for effective citizen engagement in the future with the next iteration of events that will include a second instalment of the Climathon, more PED Talks and workshops to engage with the younger demographic.
Smolyan municipality's true commitment in achieving effective citizen engagement in relation to DPEBs is clearly shown in each of their community collaboration and co-creation measures.
Open Calendars are implemented by using the municipality website, facebook profile and a digital screen on one of the main squares in the pedestrian zone of the city centre.
Next, each community collaboration and co-creation measure is explained in detail, including encountered challenges and obtained results.

#### 7.2.2.1 City Engage Month

City Engage Month related to the elaboration of the Plan for Integrated Development of the Municipality and the Bold City Vision. The City Engage Month was celebrated in October 2020. Smolyan municipality made a great effort in communicating and coordinating with stakeholders from all the areas in relation to local development: municipal authorities, energy providers, businesses, citizens, communities, entrepreneurs, innovators, etc. from Agriculture, Manufacturing, Trading and Services, Social activities and Healthcare. The activity was organised in focus groups where discussions were held covering all sectors of municipal development and incorporating the themes of the SDG's.
Valuable feedback was received from each focus group meeting including new project ideas to be carried out in Smolyan in relation to energy efficiency. The Plan for Integrated Developments of the Municipality and the Bold City Vision include all the insights and ideas collected from the City Engage Month activity, and have greatly benefited from it.
Challenges were faced ensuring representative participation from all stakeholders.
Smolyan municipality has achieved inclusive engagement and high participation rates.

### 7.2.2.2 City Lab

To commemorate the European Youth Week, The Municipality of Smolyan organised a fun and entertaining event aimed at the young people in the city, called City Lab: "Vision of young people for the future of our city". The event was supported by the +CxC team of the Municipality of Smolyan and served as a form of a City Lab to give the young people of the city a voice in the processes of forming local policies to build a better future for the younger generation and creating the Bold City Vision 2050. There, young people had the opportunity to give their opinion and fill out a survey using a QR code to share their ideas for the sustainable development of the city and how we can build its future together. Participants from different age groups filled the anonymous survey, consisting of three short questions under the motto of the event „Vision for Smolyan through the eyes of young people „and " My voice matters". The questions included what they would like to change in the city, what good examples or initiatives they would like to see implemented and how do they picture Smolyan in 30 years.


*Fig 7.2 The +CxC team with the influencer Ballan (on the left) and Citizens filling the paper survey during the event (on the right). Smolyan municipality*

### 7.2.2.3 Photo Voice

This activity was organised by Smolyan municipality in May 2021 aiming to engage the youth in expressing their views regarding the built environment in their town. High school students were able to identify through photos places such as public abandoned spaces and deteriorated buildings. Local authorities have used the students' feedback to transform some of the identified places into clean and colourful areas. The collaboration with a local NGO was key as they were of great help with the event organisation.
A vision is being built as a result of the event, on how young people imagine their town and its sustainable development in the future. These ideas will be collected into the BCV 2050.

### 7.2.2.4 Days of Sustainable Heating and Construction

This activity was celebrated in September 2021 and was organised as an open exhibition with information stands and professional training aimed at municipal administrations, investors, energy agencies, building owners, house managers, designers and construction

specialists. The Smolyan municipality worked together with the Efficiency Centre "EnEffect" which is supported by the REPLACE and nZEB Roadshow projects (founded by the H2020 European project). Smolyan municipality had its own stand of the +CxC project where citizens could give their feedback through a short questionnaire about future sustainable developments. The municipality team was there with information flyers and ready to communicate and answer questions. The event had good media coverage. Due to COVID restrictions the event was held outdoors which caused difficulties because of unstable weather. The need for an information point led by the municipality came up to provide the latest sustainable developments to citizens including ways of financing energy interventions in their homes.

"DAYS OF SUSTAINABLE HEATING AND CONSTRUCTION" WILL BE HELD IN SMOLYAN FROM SEPTEMBER 23 TO 25

14.09.2021

"Days of sustainable heating and construction" will be held in the city of Smolyan from September 23 to 25 of this year.
The program of the event includes an open exhibition with information stands and professional training aimed at municipal administrations, investors, energy agencies, building owners, property managers, designers and construction professionals.

The event is open to the public and is suitable for anyone interested in the possibilities of using sustainable (environmental, efficient and profitable) alternatives for heating the home, as well as technological innovations for the design and construction of almost zero-energy buildings.
Participants will have the opportunity to receive free on-site consultations from the representatives of the **REPLACE** and **nZEB Roadshow** projects , as well as to view specific technical solutions from the stands of the exhibiting companies offering ecological heating solutions, building materials and components for energy-efficient construction.
Demonstrations of the latest materials, products and technologies are also included.
Organizers are the Black Sea Energy Research Center and the Center for Energy Efficiency "EnEffect", supported by the REPLACE and nZEB Roadshow projects, funded by the Horizon 2020 program of the European Union.
The event is being held with the kind support of the municipality of Smolyan, supported by the **+CityxChange** project , financed by the Horizon 2020 program of the European Union.

PROGRAM

**23/09/2021 - 24/09/2021 /THURSDAY-FRIDAY/**

10:00-18:00 - Open exhibition with stands
Place: Smolyan, Svoboda Square
Entrance free

**23/09/2021 - 25/09/2021 /THURSDAY-SATURDAY/**

10:00-19:00 - Specialized trainings (online and live)
Place: Smolyan city, Bulgaria Blvd. No. 12, Smolyan Municipality Session Hall and online broadcast on the ZOOM platform

Detailed program of the trainings: **Black Sea Energy Research Center (bserc.eu)**
Entry free with prior registration* at **https://forms.gle/hx8tWkFAm2ASeMF58**

*Fig 7.3 Smolyan 'Day of Sustainable Heating and Construction' Programme.* Source: *Smolyan municipality*

### 7.2.2.5 Climathon 2021

The Climathon was virtually celebrated in November 2021 with the motto "For cleaner, greener and more sustainable Smolyan in the future". This activity was designed considering the Sustainable Development Goals (SDGs) and local sustainable challenges.
The organisation of the Climathon brought some challenges regarding collaborative working sessions due to COVID-9 restrictions. Working teams of high school students together with mentors from the municipality of Smolyan were able to generate ideas to solve local challenges regarding climate change, providing fresh perspectives.
Some of the key solutions were: Introducing "Return and Earn" vending machines in the city to tackle the recycling challenges of Smolyan, innovative recycling school initiative that can serve as a blueprint for all the schools in the area and a detailed proposal for the installation of photovoltaics (PV) panels to replace the current energy system in one of the schools.
Smolyan municipality achieved effective and continuous engagement of the students thanks to designing the activity as a contest for the best five sustainable innovative projects. Additionally students got a certification of attendance to the Climathon from Smolyan municipality, which is also an effective way of encouraging them. Working teams showed great motivation in getting involved in improving sustainable issues that affect their day-to-day lives in their mother town.


*Fig 7.4 Winners of the contest for best sustainable solution.* Source: *Smolyan municipality*

### 7.2.2.6 PED Talk "Creating Positive Energy Buildings and Communities"

The municipality of Smolyan, together with Europe Direct- Smolyan held a PED Talk on the topic of "Creating Positive Energy Buildings and Communities". Topics covered in the event included presentation of the National Recovery and Sustainability Plan; introduction to the concept of energy positive buildings, districts and communities by Energy Agency of Plovdiv; good practices from Stockholm and Vienna and a demonstration of different types of green energy through a demonstration kit. Members of the +CxC team presented the +CityxChange project and its goals to develop positive energy areas by 2050. The team presented some examples of positive single-family buildings in the city of Smolyan, as well as examples from Okinawa, Japan, where there is an energy community that has been powered by a home system with diverse energy sources for years. Architects, engineers, representatives of the construction industry, journalists, citizens and employees of the municipality of Smolyan and Europe Direct, attended the meeting.

*Fig. 7.5 Presentation of the +CityxChange project during the PED event.* Source: *Smolyan municipality*

### 7.2.2.7 Community Mapping Event

From the 20th to the 26th of June, the Municipality of Smolyan organised a campaign to improve garbage collection in our city, called "Let's create together a cleaner and greener Smolyan". The survey was conducted through an online tool that enables the city and its residents to experiment and work together to improve the urban space. It provided an

opportunity for the citizens of Smolyan to express their opinion on where in the city there is a need to place additional containers for the collection of household waste and containers for separate collection. The municipality also received feedback where other containers such as park bins, public composters and construction waste receptacles are most needed.

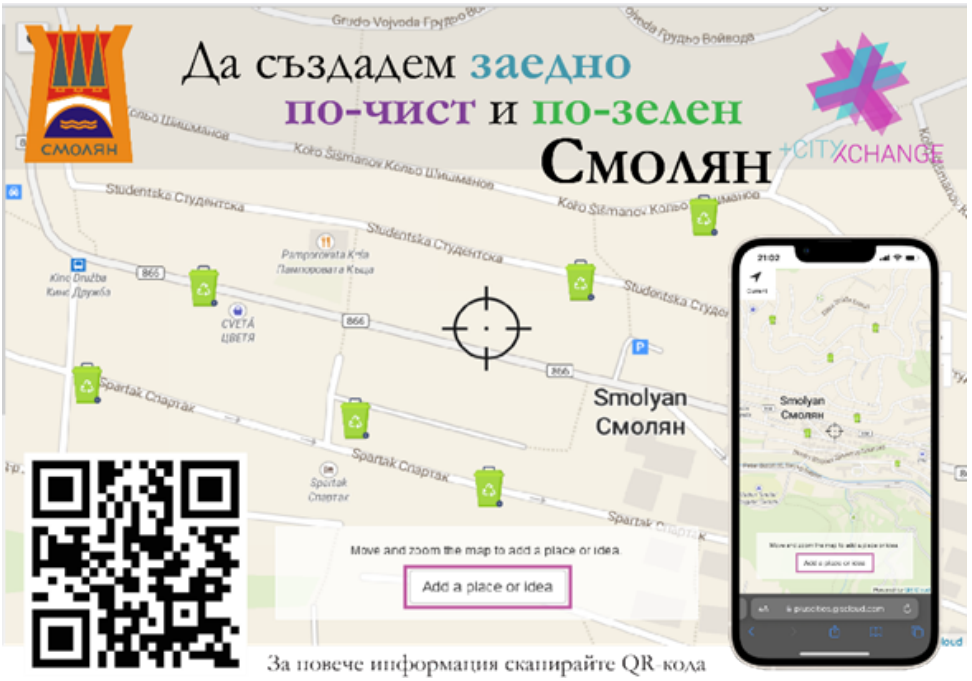



*Fig. 7.6 One of the posters for the Smolyan events.* Source: *Smolyan municipality*

### 7.2.2.8 Workshops with children and young people

*Designing the City of the Future*

In both 2020 and 2022, the Municipality of Smolyan took part in the initiative "Summer Vacation in the Museum".Using LEGO sets, the children were able to create buildings, energy sources, cars, green spaces and entertainment to share their vision of the future of the city.

*Open Lessons with Horison Energy Kit*

Within the +CxC project, the Municipality of Smolyan acquired Horizon Energy Box to create better understanding of RES in students and to help in the development of Next Generation Smart Citizen. The Renewable Energy Box provides a wide range of tools to demonstrate different RES including solar, wind power, different types of fuels cells like hydrogen, salt, etc. The +CxC team of the municipality has organised several demonstrations of the kit aimed at children of different ages from 7-17 both as a supplemental lesson to the school curriculum or as a part of Summer Programs organised by the regional library and museum.


*Fig. 7.7 Pictures from the different Smolyan events.* Source: *Smolyan municipality*

*Climate Fresk*

"Climate Fresk" is a fun and creative workshop, created with the goal to present in an understandable way the relations between human activity and climate change and to encourage the participant to take action in reducing the effects of it. The Municipality of Smolyan has hosted five Climate Fresks so far and will continue to work with schools, universities and youth organisations to organise more events.

### 7.2.3 Conclusions and recommendations

Smolyan municipality has succeded engaging citizens in collaboration and co-creation activities and building capacity through participation, always focusing on the European sustainable development goals. Smolyan has increased stakeholder diversity, they have collaborated with a great variety of local stakeholders and even with other h2020 funded projects, benefiting the quality of the resulting final measures of the community collaboration and co-creation activities. Children and young people have been effectively engaged through fun and creative activities such as “Climate Fresk”, Designing the City of the Future and Open Lessons with Horison Energy Kit.
A list of recommendations by Colaborativa, the Lead authors of the D3.2 document on citizen participation,  is included next in order to continuously foster citizen engagement and the development of PEBs in Smolyan municipality:

- To keep continuous communication: in order to achieve stakeholders involvement/engagement into the development of the citizen observatory and innovation lab.
- To keep assisting and informing the high school students about the realisation of the sustainable projects selected in Climathon 2021: this will result in students being empowered to lead and influence decision-making and make a real difference to their town for the better. As a result, next Climathon editions are guaranteed to be a success regarding citizen participation and engagement.
- Open data: gain credibility and obtain well-informed participation by sharing with the different stakeholders and citizens the process and results of each community collaboration and co-creation measure.

- Outdoor communication campaigns are already in place. We recommend strengthening online communication campaigns to extend the reach of their engagement, and to consider an online tool for centralising open calendars.

We encourage the Smolyan municipality to keep up their efforts in citizen engagement, including children and young people, as they will make a real difference to their city for the better.

## 7.3 Smolyan Innovation Playground

This Report defines a spatial and socio-economic (Innovation Playground) framework for Smolyan as including an extensive Innovation Playground boundary which contains large parts of Smolyan, 3 Demonstration Areas with proposed PEBS (in the old city centre, in the new city centre, and at Raikovo), the Smolyan Energy Renovation Hub, the specific Smolyan 'Smart City Interventions' and an ongoing Stakeholder Engagement Plan, all within the Smolyan Bold City Vision to 2050. Local characteristics of Smolyan implementation include an emphasis on municipal buildings, and activities targeting youth. The overlap/link between the Smolyan PEBs and Smolyan Innovation Playground is that the three Demonstration Areas with proposed PEBs are well geographically distributed within the Innovation Playground, so the impact can be understood across the whole municipality. Through the duration of the +CxC Project, the Municipality of Smolyan successfully organised multiple events, throughout all the Demonstration Areas of the Innovation Playground. The process in the beginning was slowed down due to the measures of prevention of COVID19, but when the measures were lifted, the number of events held in the Innovation Playground tripled in the last year, to Feb 2023.

### 7.3.1 Smolyan Innovation Playground System

#### Smolyan Places

Smolyan Innovation Playground 'Places' include:
The boundary of the Innovation Playground has been set to include all three Demonstration Areas, encompassing all public (administrative, cultural), private, business buildings, two universities, 6 schools, 7 kindergartens. The Demonstration District in the City of Smolyan covers a considerable area along the city's length, representing public, cultural, educational, business and residential buildings.

The three DA in the city are situated in its three major areas – the old and new city centre of Smolyan and the Raikovo Neighbourhood, and are located near major transport hubs in the city, connecting all the main neighbourhoods as a spine. The areas spread along the major international road connecting Bulgaria with Greece. DA1- Old City Centre is the main DA where most of the activities are implemented, DA2 New City Centre and DA3 Raikovo are potential replication sights where upscaling and replication could be achieved. The DA1 is chosen so that it focuses on an area in the central part of the city, close to the Old City Center, visited by many citizens. The DA2 New City Center includes residential, public and business buildings. The area forms the new urban centre with refurbished urban environment and elements, highly visible to locals and tourists. The buildings in the area are most frequently visited buildings, recognised both by locals and tourists alike. DA2 is in a relatively close proximity to DA1 and therefore the boundaries of the innovation playground

are set so that they include both areas. The DA3 Raikovo Replication site covers a smaller area compared to the DA1 and DA2 and consists mainly of public buildings and facilities. The area is located in the Eastern part of the city of Smolyan.

DA1 and DA2 together form the central part of the city, as they are interconnected and are designed to complete each other. The Smolyan Rhodope Drama Theatre with cinema, The Regional History Museum, Smolyan Planetarium, Art Gallery, Church "St. Vissarion Smolenski" (DA2) and the sports infrastructure – 2 stadiums, sports hall, swimming pool, multipurpose playground (DA1) altogether provide for a favourable and attractive living environment. Within the boundary of the Smolyan Innovation Playground are also situated the branches of Plovdiv University (situated between DA1 and DA2) and Varna Free University (DA2). The Technical College of Plovdiv University trains specialists in mechanical engineering, automotive and electro energy equipment, computer and telecommunication systems and telematics.

In the old city centre, in 2021, the Municipality has refurbished an old premises and opened a co-working space, seen as an urban prototype. The space is called Sky Hub Smolyan, and besides providing a comfortable working environment for citizens and guests of the city, it is also very suitable for holding meetings and different types of events. The co-working space is situated very conveniently on the pedestrian area in the Old City Centre and it's best suited to become the Smolyan citizen observatory.

In regard to the Innovation Playground 'Places' in Smolyan, territorially, the Bold City Vision (BCV) will include the whole city, not only the area around the DA-s. The Innovation Playground covers part of the city, within the BCV area. In engaging with citizens of Smolyan about this topic, innovations were seen as 'clustered' within the Innovation Playground. The policy for the future development of Smolyan aims to improve the economic and social state of the municipality on the basis of sustainable and balanced regeneration through investments in the infrastructure and human resources that should be applied to the whole territory, not excluding some parts. Smolyan used to be separate centres in administrative terms, so the relatively recent single identity of the city is enhanced by thinking of 'Innovation Places' as locations people could be drawn to as multiple focal points within one municipality.

| # | ID | CREATED | MODIFIED | Approved | Наблизо ли живеете до мястото, което сте посочили? Или често го посещавате? | Какво бихте искали да се постави на това място? | Ако има поставен публичен компостер/ съдове за разделно събиране в близост до дома Ви, бихте ли го използвали? | Ако Общината предоставя съдове за събиране на строителни отпадъци при ремонт, бихте ли ги ползвали? | Ако желаете, моля оставете Вашето предложение как да направим нашия град по-чист. | Status | Ако желаете, добавете снимка на мястото, на което смятате, че е удачно да се постави съответния съд. |
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| 1 | 13 | 06/16/2022 1:38:38 PM | 06/16/2022 1:38:42 PM | 1 | Харесва ми да идвам тук в свободното си време | Шишеяд - съд за събиране на пластмасови бутилки | не съм сигурен/а | да | | | |
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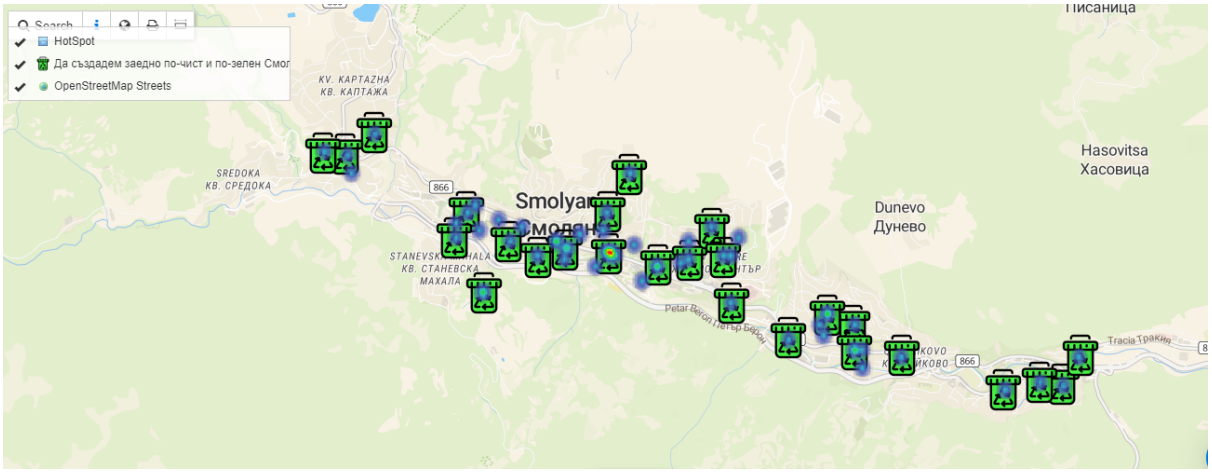


*Figure 7.8 Smolyan Test Community Mapping website, and sample responses, November, 2021 Source: Space Engagers.*

## Smolyan Activities (that generate innovation)

This Section briefly records activities of the Smolyan Innovation Playground which are more fully described in the Community Participation Section of this Report. In general terms, throughout the years 2020 and 2021 COVID-19 pandemic the usual mechanisms through which the municipality used to engage with its citizens were heavily impacted, forcing the city to look for more innovative ways to facilitate the necessary conversation and promote the road towards a carbon neutral and more sustainable future. Since the lifting of the COVID-19 restrictions in the beginning of April 2022, the +CxC team of the Municipality of Smolyan has doubled its efforts in the organisation of events and campaigns to generate innovation. Some examples include :

Opening a new co-working space:

In 2021 the first co-working and collaboration and co-creation space in the city, Sky Hub Smolyan, opened its doors to the public. The space is located in Demonstration Area 1 in a newly refurbished part of an old municipal building right in the heart of the Old City Centre. It aims to provide a comfortable and convenient place for young professionals who have

come back to the town to work from distance, or for starting companies that need an office, etc. Sky Hub Smolyan has several separate rooms to be used as offices, a meeting room and a coffee room. Because of its location, the space provides the perfect environment to be developed as a citizen observatory or community exchange area and the municipality is currently looking for funding for necessary visual materials or even a city model to showcase innovation areas in Smolyan. The space has already met its first customers and since the beginning of 2022 is hosting Smolyan's first local IT academy.

Creating Bold City Vision Smolyan 2050:

The Municipality of Smolyan started developing the Bold City Vision 2050 in 2020 together with its Plan for Integrated Development of the Municipality 2030. Considering the impact of both of those strategies, from September 29th 2020 to October 23rd 2020 we held City Engage Month to serve as a direct form of communication with all stakeholders in all areas related to the local development considered as a priority for the city and the community. In order to cover all the different priorities set by the municipality, such as infrastructure, environment, tourism, education, etc., twelve focus groups were formed with each group having its own agenda and subthemes to be covered during the campaign. The aim was to outline the current state of each sector, to hear the problems and to discuss possible solutions. The main focus of the discussions was the future development of the city in a smart and sustainable way in accordance with the SDGs.

Following the loosening of the Covid-19 restrictions in May 2022 the Municipality of Smolyan held Open Citizen Lab in the Innovation Playground, during an outside event with popular singers and influencers dedicated to the European Week of Youth. The Lab's main focus was the young people of the city and it aimed to give them a voice in the processes of forming local policies to build a better future for the younger generation and creating the Bold City Vision 2050. Citizens were provided with short questionnaires, consisting of three simple questions to help convey their vision of the future of Smolyan and which areas of the city development they see as a priority. The survey could be filled on a paper on site or in a Google form accessed via QR code. Due to the overwhelming response from the public, the Municipality expanded the polling range to include the entire city and to extend the timeframe for the survey to gather more diverse results. Even though the survey is still ongoing, some of the priorities have already been included in the ambitions for 2050.

Hosting Smolyan's first Climathon:

In November 2021, the city of Smolyan hosted its first Climathon in the Innovation Playground, which due to the Covid-19 restrictions was an entirely virtual event under the motto "For cleaner, greener and more sustainable Smolyan in the future". Climathon is an innovative approach towards solving climate and sustainability issues by proposing real solutions that can be put into practice almost immediately. Six teams, formed by students from local high schools and the Young scouts organisation, joined the event and worked together with mentors from the Municipality of Smolyan to generate innovative ideas to solve local challenges, inspired by the city needs and the Sustainable Development Goals. The proposed solutions varied from introducing innovative ways to improve recycling, using RES to create PEBs and creating more green spaces in the city. During this event the young people in the city showed great investment in the future of the city and in reducing the effects of climate change. They were opened for discussion of the local challenges and provided fresh perspective on the given topics. Currently we are in the process of

organising the next instalment of Climathon Smolyan as part of a three day event in October 2022.

'Climate Fresk' workshops:

'Climate Fresk', part of Climate Kick, is a fun and creative game created by French climate specialist Cedric Rigenback, which aims to increase people's knowledge of the climate and, with the help of a deck of 42 cards, presents in accessible and understandable language the causal links between human activity and various elements of climate change. The workshop is designed for both adults and children. The first 'Climate Fresk' in Smolyan was organised for the Open Doors Day for Sky Hub Smolyan and was facilitated by Martin Zaimov from the organisation Wind of Change, official facilitators for Bulgaria. Following the first workshop, a member of the +CxC became a facilitator as well, allowing us to host more workshops. Since then the Municipality of Smolyan has hosted a total of four 'Climate Fresk' s in the span of three months with local schools and youth organisations, and we hope to continue this trend during the next school year as well.

Horizon Energy Box workshops:

Within the +CxC project, the Municipality of Smolyan acquired Horizon Energy Box, an educational tool, designed to promote better understanding of RES in students of different ages and to help in the development of Next Generation Smart Citizen. The Renewable Energy Box provides a complete understanding of how fuel cell technology interacts with renewable energy sources to create an entirely sustainable power grid. Solar power, wind energy, kinetic energy from a hand crank and a demonstration of the incredible storage potential of a super capacitor. There is a range of fuel cells to compare PEM hydrogen fuel cell, the salt-water fuel cell and a direct ethanol fuel cell. The box provides opportunities for countless experiments, demonstrates many scientific principles at work and leaves plenty of space for creativity. In the last few months the +CxC team of the municipality has organised several demonstrations of the kit aimed at children of different ages from 7-17 in the Smolyan Innovation Playground, both as a supplemental lesson to the school curriculum or as a part of Summer Programs organised by the regional library and museum.

Mapping Event "Let's create together cleaner and greener Smolyan":

From the 20th to the 26th of June 2022, the Municipality of Smolyan organised a campaign to improve garbage collection in our city, (including in the Innovation Playground), using an online Mapping tool, provided by Space Engagers, that enables the city and its residents to experiment and work together to improve the urban space. It gave the citizens of Smolyan an opportunity to express their opinions on where in the city there is a need to place additional containers for the collection of household waste and recycling. The municipality also received feedback where other containers such as park bins, public composters and construction waste receptacles are most needed. The mapping collected 65 answers for the week during which it was active. It helped pinpoint places in the city where waste management can be improved and showed the public's interest towards keeping the city clean. There was a clear interest towards the use of public compost bins, bins for collecting plastic bottles and recycling bins. Some of the suggestions included: promotion of civic control and placement of waste receptacles based on number of people living in the area; video surveillance of critical areas and fines for violators; information campaigns about how to dispose of electrical and electronic equipment and construction waste; introducing an

specific time of the day when the citizens can dispose of their waste which will improve the waste collection.

Building partnerships in Places:

During the development of the Innovation Playground, the Municipality of Smolyan has strived to improve its relationship with existing partners and aimed to continue building new ones. During the summer vacation of 2022, we continued cooperating with the Regional Library and the Regional Museum by extending our participation in their summer programs for children. As part of the museum initiative "Summer Vacation in the Museum", the Municipality organised a "Designing the City of the Future" workshop where using LEGO sets, the children were tasked with building the future Smolyan as they see it through their eyes. Other activities in the Innovation Playground included meetings, participation in events, activities with Youth Organisations, meeting with EVN (ER-South), hosting the set up of Business Council on Energy Efficiency and Circular Economy in the city of Smolyan as part of the cooperation program INTERREG Greece-Bulgaria. The Municipality has co-organized several events with other partners such as Eneffect, Europe Direct and local NGOs to promote the usage of RES and the developments of PEBs.

### Smolyan Data

- BCV Survey data - during the City Lab event,, the +CxC team received overwhelming response from the attendees, especially those age 7-12. Following the success, we extended the reach of the survey to not only local schools and community centres but the entire city to help create the Bold City Vision for Smolyan 2050. The city have collected more than 100 responses to the survey, both through the online form and the paper survey, filled on site. The collected data showed clearly the topics considered relevant for the citizens of all ages. The topics included infrastructure, eMobility, conservation of the local natural resources, sustainable city environment, supporting the cultural development and entertainment in the city, air quality and waste management, controlling the population of stray dogs in the city.
- Mapping data
  The mapping collected 65 answers for the one week during which it was active. It helped pinpoint places in the city where waste management can be improved and showed that there is interest in recycling and composting among the citizens and that measures that promote it will gain support.

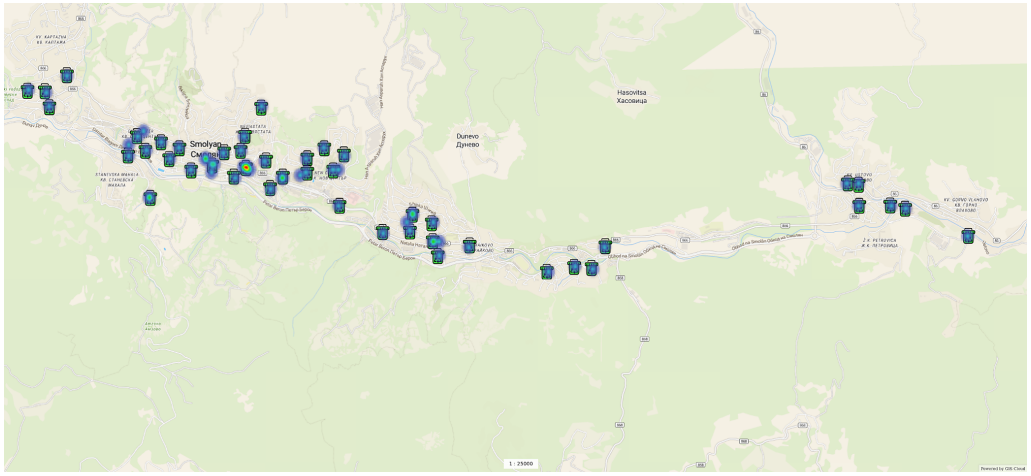


*Fig 7.9 Climate Fresk data - part of each Climate fresk is posing a question about intervention to reduce the effects of the climate change ranking them by difficulty of implementation and expected impact. Source; Smolyan municipality*

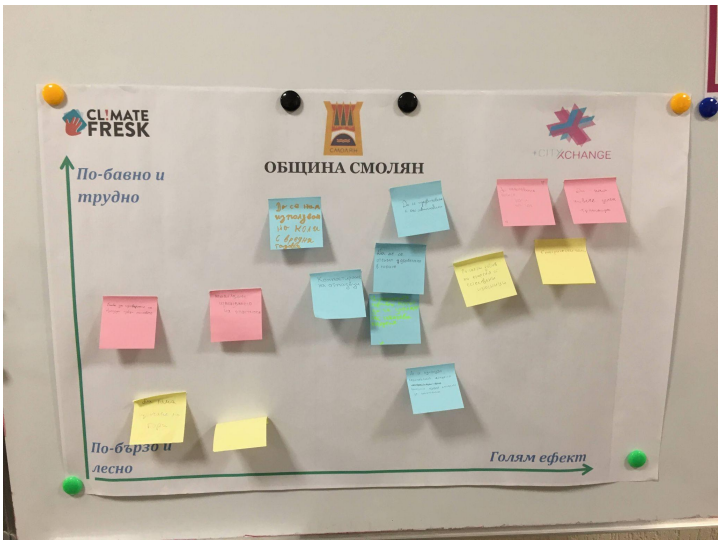


*Fig 7.10 Climate Fresk images. Source; Smolyan municipality*

## Smolyan Enabling Mechanisms

As part of Smolyan Innovation Playground 'Enabling Mechanisms', Smolyan Municipality has been active in developing projects that trigger the local development in many areas. Since 2007 the municipality has attracted a significant amount of financial resources including its own budget, state budget, European Programmes and financial instruments in order to improve the urban and socio-economic development of the city and the area. The municipality has a specific department that triggers the project development and coordinates the implementation. In the local municipal plans for development the innovation has been recognized as a leading principle for good governance. It is worth mentioning that Smolyan has received the European label for innovation and good governance and the local administration is following the 12 principles in its work since then. So the quality of the administrative service could also be considered as one of the enabling mechanisms.

The partnership of the local administration with different stakeholders through forming consultative councils in different spheres, organising and hosting different events and

working in partnership in different projects is also a mechanism that enables innovation in local development.

### 7.3.2 Smolyan Innovation Playground Journey

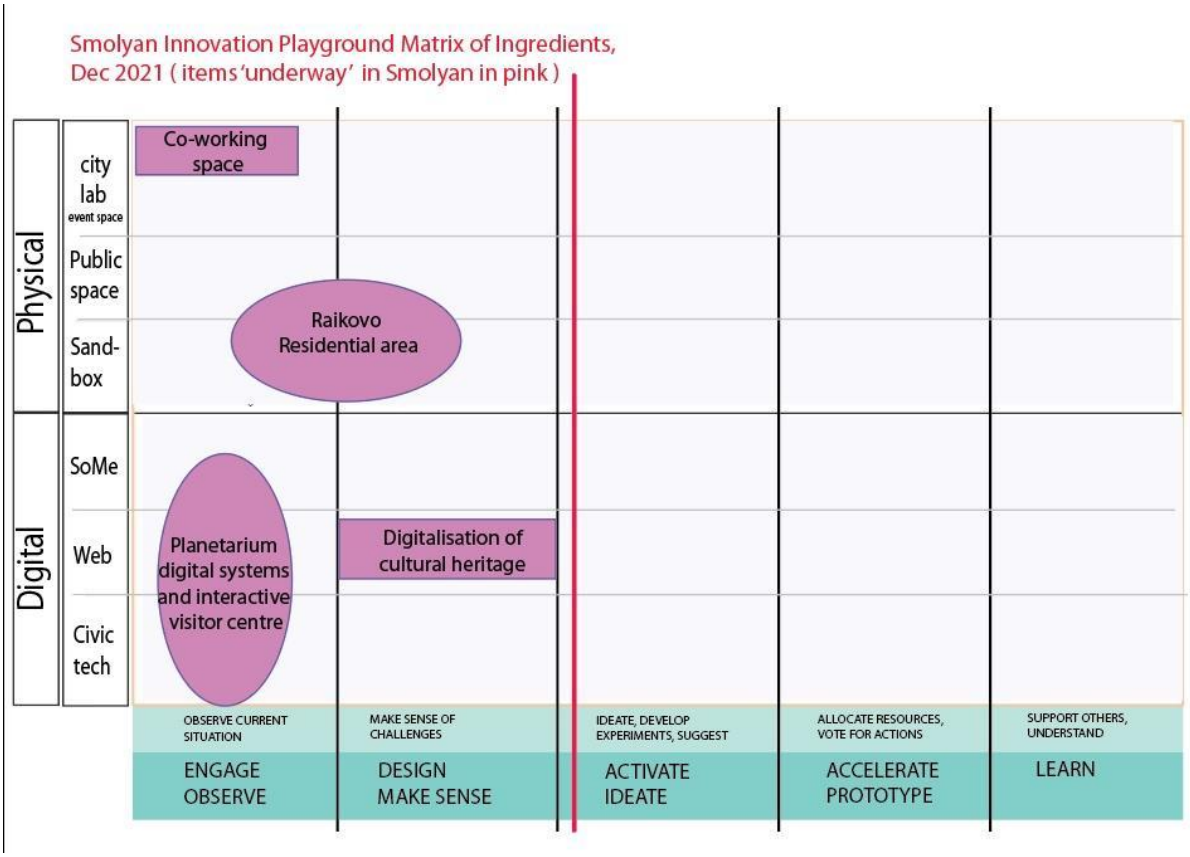


*Fig 7.11 Smolyan Matrix of Ingredients, December 2021. Source: Space Engagers*

As regards steps to support the acceleration to a positive energy city which involved adaptation to local conditions (or localisation), and in terms of the 'Journey' of Smolyan, there were Innovation Playground Boundary changes during implementation. The boundary outline of the Innovation Playground changed considerably during implementation, from a smaller, more local outline in line with the DA to the west of the historic city centre (April, 2020), to a larger footprint including residential neighbourhoods to the east (October, 2020), and then a boundary which coincides with the municipal boundary of the entire city of Smolyan (December, 2021). The reasons for expansion of the line was to connect the three demo areas which are situated in three different parts of the city - the Old City Centre, the New City Centre and administrative area and part of the Raykovo neighbourhood. The border was set so as to include important places and educational institutions like the Smolyan branches of two Universities, high schools, cultural institutions and community centres where innovation can take place.

Changing the size of the Innovation Playground over time was perceived as a 'positive' for citizens and the city. However, translating the term 'innovation playground' locally (зона на иновации, or 'Area of Innovation' in Bulgarian), and explaining that to stakeholders and citizens was not easy. There is no equivalent term in Bulgarian for 'Innovation Playground'.

Among the **lessons learned** for Smolyan in the Journey of the Innovation Playground:
Our city has three 'centres' so the term was not optimal for this.
Smolyan is now more likely to be aiming towards demonstration, administration and citizens (rather than abstract concepts) so while the Framework worked well, it was not necessarily always in a 'formal' way

We increasingly think of the innovation in Smolyan as 'moving in an area' rather than 'fixed' in the city...maybe a more 'dynamic' physical footprint (or blended with digital presence?) of the Innovation Playground concept would suit us better..?

### 4.3.3 Smolyan Localised Innovation Playground

In reporting on T6.3, Subtask Seven (SE) considers CommunityxChange and 'Steps to support the acceleration' towards a positive energy city. In Task 6.3, CommunityxChange, Task description, it is stated that the first steps to support the acceleration to a positive energy city will involve adaptation to local conditions (or localisation), including :

- developing a brief;
- examining precedents;
- identifying user personas - focus on understanding users;
- identifying supports.

In Smolyan, these Task Steps have been explained as follows:

| Task Steps | Smolyan |
|---|---|
| developing a brief; | Conversations in the municipality |
| examining precedents; | Trondheim Innovation Playgrounds<br>Limerick Innovation Playground Report<br>Limerick City Engage Weeks<br>Limerick Mapping initiatives<br>Other FCs<br>Climate Fresk of Sofia |
| identifying user personas - focus on understanding users; | Stakeholders (private building owners)<br>Technology Providers<br>Municipal Authorities (Feasibility Study Smolyan)<br>Young people, Climathon participants |
| identifying supports. | Municipal staff of Smolyan<br>Events organisers (Energy efficiency partners, innovators)<br>Local administrative organisations<br>EU organisations (Eg. Europe Direct, EU Commission)<br>Trondheim and other partners |

*Table 4.1 +CityxChange T6.3 adaptation to local conditions in each city (July 2020)*

### 4.3.4 Implementation Results Smolyan Innovation Playground

The implementation results of Smolyan Innovation Playground can be categorised into achievement of aims in relation to four aspects: Purpose, Outputs, Outcomes and Performance of Smolyan Innovation Playground.

| Achievement of the Purpose of the Smolyan Innovation Playground can be measured in terms of: |
|---|
| Smolyan Innovation Playground **brings different virtual and physical places and activities related to inclusive and open innovation into a coherent structure** by, for example, in-person and online 'polls' (including QR code) about the Bold City Vision event throughout May and June 2022, starting with holding Open Citizen Lab during an outside event with popular singers and influencers dedicated to the European Week of Youth. Following the success of this event, Smolyan used the CxC Mapping tool for a campaign connected with the Circular Economy. The tool itself was found very useful by the citizens as a form of communication with the local authorities. |
| Smolyan Innovation Playground **facilitates collaboration between citizens, research institutions, local government, state agencies, businesses and civil society organisations** by, for example, developing physical spaces where activities can happen, aiming to transform Sky Hub Smolyan into our Citizens observatory. Although it is in early stages of development, the project took examples like Limerick Citizens Observatory, and we decided to develop something similar here including replicating some of the partner's events and developing our own to suit the needs of the local community. |
| Smolyan Innovation Playground **empowers citizens to actively participate in processes of change** through the Innovation Playground framework. The Municipality of Smolyan was able to develop more innovative ways to engage with different groups of citizens, especially through Bold City Vision. |
| Smolyan Innovation Playground **helps to find new, relevant and effective ways of addressing** challenges that matter to people, for example through Smolyan Climathon, Smolyan community mapping exercises, a PED Talk "Creating Positive Energy Buildings and Communities"and other initiatives. |

| Achievement of the Outputs of the Smolyan Innovation Playground can be measured in terms of: |
|---|
| Smolyan Innovation Playground **enables new ways of doing things**, like having clear physical boundaries to discussions on energy transition |

| |
|---|
| Smolyan Innovation Playground **enables new partnerships** like connections with the business community in neighbouring areas, and 'PED Talks', Energy Champions alliances with new partners in the business community, 'crowd-solving' together. |
| Smolyan Innovation Playground **enables (new) places (of innovation)** through, for example hosting energy events in the schools, museum, library and informal spaces outside the municipality buildings |
| Smolyan Innovation Playground **enables (new) tools and activities (of innovation)** like 'Horizon Energy Box' (introducing new energy sources to people) energy games, and bringing activity to people rather than waiting for citizens to come to the city. QR codes for mapping and BCV were also very popular, inspiring the city to do more innovative interaction digitally and locally. |

| Achievement of the Outcomes of the Smolyan Innovation Playground can be measured in terms of: |
|---|
| Smolyan Innovation Playground **helps the engagement of a broad cross-section of citizens and other stakeholders** in activities related to their place and local issues, by engaging as many different age groups as possible, combining technical and non-technical stakeholders, participating in business as well as other stakeholder events, engaging with different relevant administrative service providers involved in city making and managing in Smolyan. |
| Smolyan Innovation Playground **helps citizens and other stakeholders to feel empowered and able to influence their place and change things**, having formal ( for example in BCV ) and informal (eg. mapping) processes and ways to influence change in the Innovation Playground. One aspect of relevance here is the public hearing in Smolyan (one month, a formal process) for any strategic document, or new city project proposed by the city. |
| Smolyan Innovation Playground **helps progress in relation to UN Sustainable Development Goals and the Low Carbon Transition**, through local events like Climathon, mapping and BCV workshops, and Climate Frisk. |

| The Performance of the Smolyan Innovation Playground can be measured in terms of: |
|---|
| Smolyan KPI 30 ('number of innovation labs/playgrounds contributing to the creation of DBEP') The current potential of introducing one **Innovation Lab in Smolyan** (a Citizen Laboratory) is high, but it is complicated. It's not a fixed place, more like people bringing knowledge where it's needed. Even a multi-family home could be a place of innovation if needed, for example, so the concept of "Lab' may evolve to meet the needs locally. |

| |
|---|
| **Smolyan metrics** demonstrate performance, related to the different stakeholders engaged, include data on attendees to events, diversity of citizen type engaged with, as described in KPIs and other Deliverables. Age ranges between 8 and 80 years old were a particular feature. |
| **Smolyan innovations** that emerge include multiple 'centres' inside one Innovation Playground, the concept that the Innovation Lab 'could be mobile', and for the people in the municipality working on the project, the clear need for establishing energy communities as a priority. Work must be very localised because of the nature of the city, and the work to be done in engaging fully. |
| Evident **qualitative and quantitative changes in Smolyan** include more informed energy conversations, and the clear need for close work with the city council in understanding the transition. |
| **Smolyan replications** (WP8, Scaling-Up, Replication and Exploitation), included mapping, and future DST expected benefits include training, but the data collected for it was a benefit, in seeking other funding. In BCV we got useful direction in how to pursue it locally from National partners and LHCs. Limerick City Engage Weeks were very inspiring, including leading to our hosting for Earth Week. Trondheim events, as recorded in Deliverable, were less innovative for us. For the DPEB, we learned 'what to do', but also what 'not to do' (eg,. Don't advance too fast if you don't have the Framework set up first). Replicating EMaaS, there are local specifics making replication difficult, but watching others helps. Another learning is to know the physical areas in which to target investment, so benefits of frameworks can be applied quickly, and tested again in other areas later. |
| The performance of **Smolyan dissemination and communications** (WP10, Dissemination and Communication) can be measured in terms of feedback and impact locally. Substantive changes include increased awareness across different generations about positive energy and the transition. In particular, it inspires children in Smolyan also to 'lead the change', as they get excited about it. |

### 4.3.5 Smolyan Innovation Playground Conclusions

Conclusions can be based on Implementation Results of Smolyan Innovation Playground, and can be categorised into parts : System, Journey, Localisation and Themes. Smolyan Innovation Playground System conclusions suggest firstly that any place in Smolyan can be the place for innovation, but bringing concepts of innovation to local communities in some centres of the Smolyan Innovation Playground, (instead of waiting for them to come to the city) encourages active participation locally. Smolyan Innovation Playground Journey conclusions include the fact that Smolyan successfully engaged with mapping the boundaries of the Innovation Playground in collaboratively mapping it, and also community mapping and BCV engagement. The journey included learning to 'couple events', (eg, temporary city Lab within the boundaries of culture events). Smolyan Localised Innovation Playground conclusions include the fact that mapping locally literally creates engagement in

Smolyan, from observation and sense-making to co-design and possibly in the future, prototyping. In relation to Themes of an Innovation Playground, one of the main issues and goals for Smolyan is to make the residential buildings energy efficient through buildings retrofit and changing of their heating systems to RES, and diversification of this. Wood burning, the main current energy source, is not optimal in relation to air pollution. Another theme For Smolyan, as a priority is energy measures in educational infrastructure, social infrastructure, cultural buildings, and diversification, not just solar. In terms of cross cutting themes, energy efficiency and clean air, better cooperation between local authority and citizens, and also Smolyan needs to improve its urban transport system, parking, EV-s and we want the Smolyan Innovation Playground to help this. Smolyan concluded that more green spaces, and more cultural events linked to energy transition, are also priorities for the future for Smolyan.

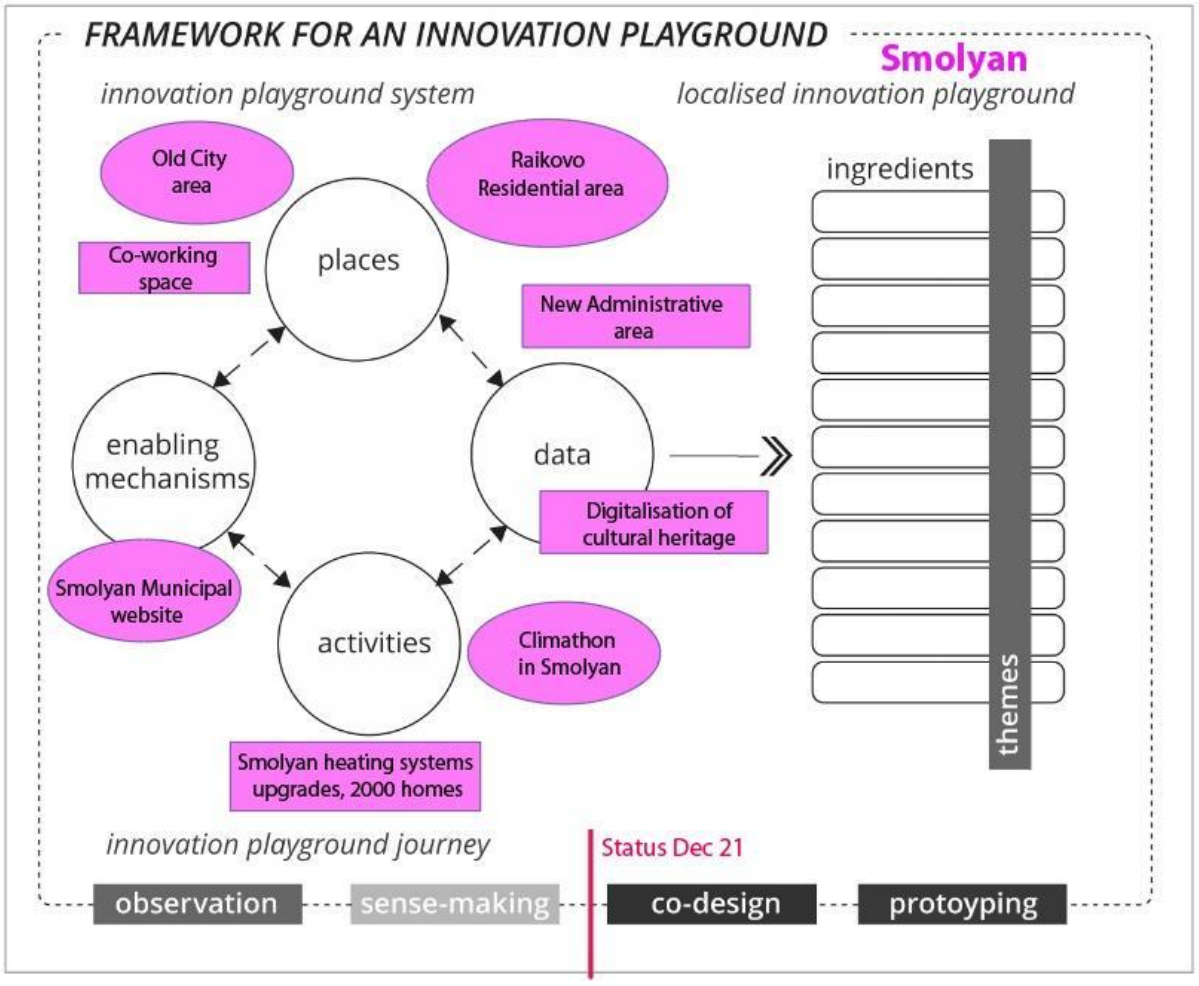


*Fig 7.12 Smolyan Localised Innovation Playground implementation image Dec 21. Source: Space Engagers*

# 8 Võru Implementation Report

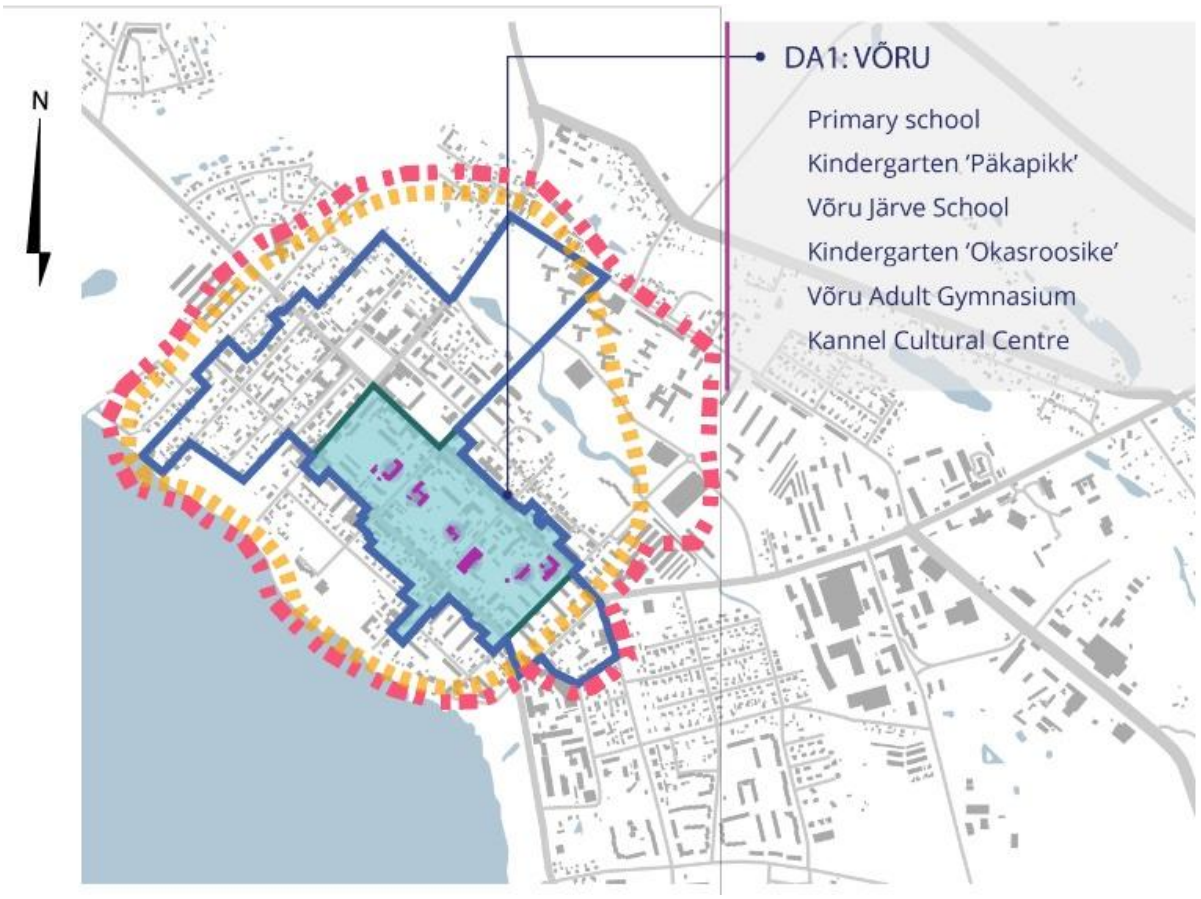


*Fig 8.1 Võru Innovation Playground mapping (Interim, 2021). Source: Space Engagers*

## 8.1 Introduction to Võru

Community participation and Innovation Playground implementation in Võru are characterised by the fact that citizen engagement and communication has been strengthened thanks to social media communication and outdoor communication campaigns, and the fact that there is an emphasis on municipal and public buildings, mobility and renewable energy communities in the Võru Innovation Playground.

## 8.2 Võru Community Participation

In this section, the results of applying the approach explained in section 3 community collaboration and co-creation measures and open calendars for the case of Võru municipality are included.

### 8.2.1 Collaborative working sessions with Võru

Section 6.2 of 'D3.2 Delivery of the citizen participation playbook' includes the recommendations particularly defined for Võru municipality in order to: achieve effective and inclusive community engagement, and to use the most suitable participation tools

(physical and online) when developing community collaboration and co-creation activities and open calendars. Refer to this document for more detailed information.

### 8.2.2 Võru's community collaboration and co-creation measures and open calendars

Community collaboration and co-creation measures in Võru have ranged from public engagement events such as "+Energy Week", "Climathon" and "Crowdsourcing urban/mobility data", co-design workshops such as "Virtual BCV workshops with students" and "Workshops with children", and narrative tours such as the "City walks in the Old Town" activity and "Bicycle Day".
Võru municipality has made a great effort to keep organising engagement events even with pandemic restrictions. Open Calendars are implemented in Võru by using the municipality's integrated web page design app. Next some of the community collaboration and co-creation measures are explained in detail, including encountered challenges and obtained results when available.

#### 8.2.2.1 Climathon

A Climathon event was held virtually on 19-20 February 2021 due to pandemic restrictions. The event went well despite not having prior experience with stakeholder engagement using Zoom and being virtual. Google Jamboard was used as an additional participation tool and it proved to be very useful. Recordings of main room sessions were made available on Vorü's YouTube page and results on the Facebook event page. Some of the key insights identified by Vorü's municipality from organising the Climathon were:

- Due to positive feedback from citizens, similar events should be held regularly;
- Digital tools are a great mean for stakeholder engagement and it might in some cases attract otherwise neglected stakeholder groups (people who would be reluctant to attend an in-person event);
- Technical assistance is required during virtual events;
- General public expects follow-up activities;
- Some topics are difficult to address and need a special platform to merge the visions of different stakeholder groups.

#### 8.2.2.2 +Energy Week

This public engagement event was celebrated in August 2020 and consisted in a wide range of engagement activities, such as:

- City bus tours regarding the town environment, and walking tours to the sewage treatment plant and the Võrusoo boiler house.
- Online training workshop regarding LIFE program climate project.
- Environmental information campaign "The sea starts here" making signs in Võru city space.
- Seminar on energy efficiency "Local government - the Smart Orderer of construction projects"
- Energy companies were presenting their products. Additionally, energy workshops were organised for families.

- A vision tent was settled up for people to come and think about how to save energy and make the urban environment even better and more sustainable!

The event served as an ideation project to predict the focusing areas of the BCV.

#### 8.2.2.3 Other community collaboration and co-creation activities

Virtual BCV workshops with students were held in February 2021 with High school students using Miro boards. About 40 participants gave their graphical input on the city map, visualising how the urban spaces are currently used by the youth, and where/what could be improved to make the community more lively and adapt it to citizens' needs.

During the annual event popularising cycling (Bicycle Day) an attempt was made to crowdsource urban/mobility data: the activity produced as a result a map of locations in the city that need improvement to allow better light traffic. Using partially the experience from Limerick the communication surrounding the attempt was not targeted appropriately, resulting in lower-than-expected participation rates. Outcomes were discussed after the event and another improved method has been developed since, involving co-operation on specific mapping tasks in specific areas.

In order to improve the visibility and enhance interactivity of workshops on renovation a concept of City Walks in the old town was piloted. This meant a physical meeting on-site where a person from an apartment building that had renovated their home shared their experience with the renovation project from start to finish. This meeting was quite popular and as a result a renovation-planners' support group/collaboration forum is planned to be organised in 2023.

A similar event was held in December 2022 in the midst of the energy crisis. A world cafe style event was held to scope topics related to energy and sustainability. The meeting was successful: while it had a smaller number of participants, it was possible to go in depth in energy-related topics and share experiences on a more detailed level. An approach similar to energy champions is discussed and likely to be tested in 2023.

### 8.2.3 Conclusions and recommendations

Võru municipality has strengthened social media communication as well as outdoor communication campaigns in public engagement events and narrative tours.
Võru municipality has celebrated several citizen informative sessions organised as physical actions, which is a straightforward way of approaching citizens.
Participation rates in community collaboration and co-creation events such as the World Cafe on energy and sustainability and the City Walks are planned to be improved in the next editions based on the lessons learned. Targeting appropriate stakeholders is key for an inclusive and effective citizen participation.

A list of recommendations by Colaborativa, the Lead authors of the D3.2 document on citizen participation, is included next in order to continuously foster citizen engagement and the development of PEBs in Võru municipality:

- Continuous communication with citizens is crucial to ensure the success of the implementation of the final measures resulting from any participatory process. For the case of the Climathon and the +Energy Week, we encourage it to be transparent and disseminate all the information. Virtual BCV workshops gave valuable feedback from students as a result, sharing how the municipality uses citizen's insight to improve the urban spaces in their community is crucial to strengthen citizen trust. The citizen needs to know how and when this information is used to make decisions at a local level, such as how they affect city strategic documents.
- Võru would greatly benefit from organising informative sessions with local communities regarding localising the SDGs. Additionally, the next edition of Climathon and +Energy Week events will be of great help for approaching more citizens regarding energy and sustainability challenges in their communities.

## 8.3 Võru Innovation Playground

This Report defines a spatial and socio-economic (Innovation Playground) framework for Võru as including an Innovation Playground boundary which coincides with the municipal boundary of the entire city of Võru, 1 PEBS ('7 buildings that are public property'), the specific Võru 'Smart City Interventions' and an ongoing Stakeholder Engagement Plan, all within the Võru Bold City Vision to 2050. Local characteristics of Võru implementation include an emphasis on municipal and public buildings, mobility and renewable energy communities. The overlap/link between the Võru PEBs and Võru Innovation Playground is that all the buildings of the PEB are in the old city centre (also the centre of the Võru Innovation Playground) and the PEB can therefore be easily understood as centred geographically and prominently within the whole municipality.

### 8.3.1 Võru Innovation Playground System

The Võru Innovation Playground System is made up of four interrelated elements, of 'places', 'activities', 'data' and 'enabling mechanisms':

#### Võru Places

Old Town Area
The old town area specified on the map is a particular target of innovation due to barriers established during the project planning phase, during the Climathon and developing the Bold City Vision. It is clear that special care has to be taken for the area with numerous buildings in desperate need of deep reconstruction and citizens who are quite often not equipped in their financial and operational capacity to take action.

Buildings in and around the Innovation Playground (the whole city)
While the old town is a special case, there are apartment buildings and detached houses in the area where residents are interested in energy efficiency and aesthetic improvements to their real estate. There are lacks in operational and financial capacity there as well and with the innovation playground methodology Võru is hoping to overcome the barriers and speed up the renovation process. As an important element of collaboration and co-creation the innovation playground approach allows to co-create pleasant and functional urban spaces surrounding individual buildings.

Mobility within and around/from the Innovation Playground (the whole city)
A substantial proportion of the whole area of Võru is made up of detached houses with the surrounding land plots. This means the population density is relatively low. Coupled with the modal shift in how people prefer to travel, the mobility in Võru and in the wider region needs rethinking. Through the Innovation Playground model new ways of public engagement are used, together with crowdsourcing the mobility data about the situation "as-is" and as the citizens of Võru would like them to be. Depending on the transport mode the boundaries vary, but focus is on the regional scope of mobility for routes that are used daily or at least a couple of times per week.

Renewable Energy Communities in Võru
The municipality is offering seven preliminary sites as a basis to co-design an Energy Community with the citizens and all parties interested. The purpose of the energy community concept would be to develop on-site renewable energy production and share the energy production within the community. The renewable energy community is to be created within the Innovation Playground boundaries, as an urban prototype for the city.

The Võru Innovation Playground is within the boundaries of the Võru Bold City Vision as well. The BCV extends beyond the innovation playground boundaries, but is important in giving a concept on how the Innovation Playground area interacts with the rest of the city.

| # | ID | CREATED | MODIFIED | Approved | Kas sa kõnnid või sõidad rattaga/tõuksiga? | Kas soovid anda negatiivset või positiivset tagasisidet? | Anna koha kohta veidi informatsiooni | Kust praegu oma teekonda alustasid? | Kas oled teel kooli, tööle, koju või teise sihtkohta? | Kui valisid "muu sihtkoht" siis soovi korral täpsusta. | Kui palju inimesi Teie hinnangul seda kohta päevas läbib? | Kui tihti Te seda kohta ise läbite? | Status | Palun lae üles kohast tehtud foto. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 3 | 05/01/2022 11:40:47 AM | 05/01/2022 11:44:00 AM | 1 | Sõidan tõuksiga | negatiivne | Keskväljakul kivid lahti | kesklinn | muu sihtkoht | niisama jalutamas | 100 | 1-2 korda nädalas | |  |
| 1 | 4 | 05/31/2022 4:32:46 PM | 05/31/2022 5:19:23 PM | 1 | Sõidan rattaga, Liigun jalgsi | negatiivne | Mõlemal pool kõrge äärekivi | Kreutzwaldi | muu sihtkoht | | 200 | 1-2 korda nädalas | |  |
| 2 | 5 | 05/31/2022 4:35:16 PM | 05/31/2022 5:19:25 PM | 1 | Sõidan tõuksiga | negatiivne | Sujuvad betoonist veerennid oleksid mugavamad | | muu sihtkoht | | 100 | 1-2 korda nädalas | |  |
| 3 | 6 | 05/31/2022 4:42:39 PM | 05/31/2022 5:19:25 PM | 1 | Sõidan rattaga | negatiivne | Kõrge äärekivi kõikidel ülekäigukohtadel | | muu sihtkoht | | 150 | 1-2 korda nädalas | |  |
| 4 | 7 | 05/31/2022 4:48:12 PM | 05/31/2022 5:19:26 PM | 1 | Sõidan tõuksiga | negatiivne | Kõrge äärekivi | | muu sihtkoht | | 150 | 1-2 korda nädalas | |  |
| 5 | 8 | 05/31/2022 4:53:41 PM | 05/31/2022 5:19:27 PM | 1 | Sõidan tõuksiga | negatiivne | Kõrged äärekivid paaritul poolel kuni | | muu sihtkoht | | 150 | 1-2 korda | |  |

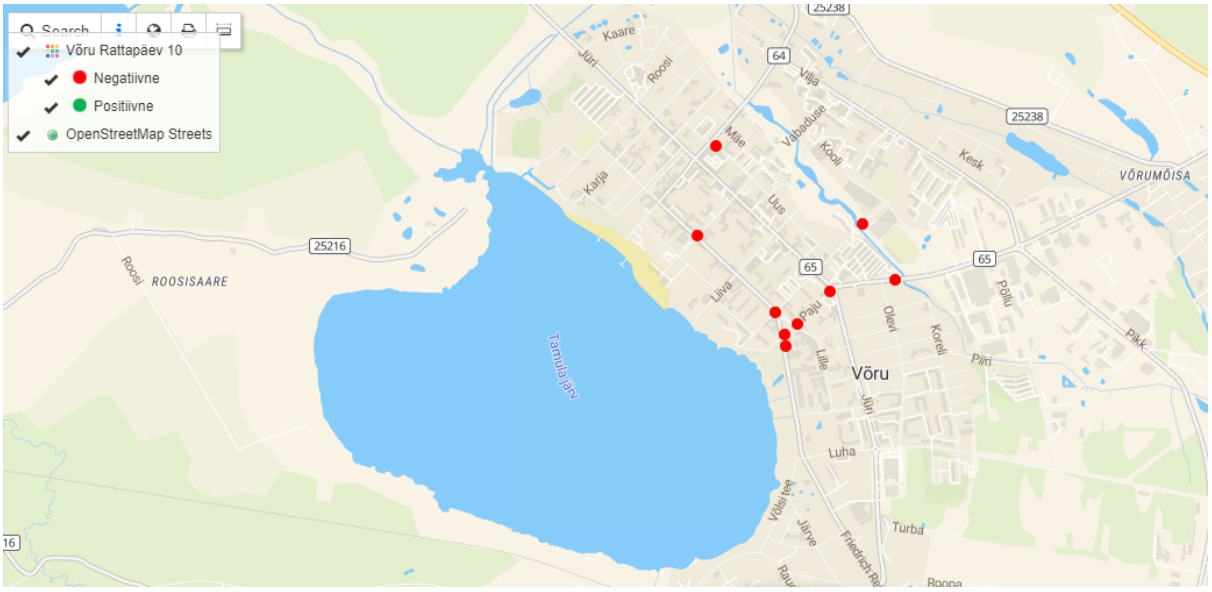


*Figure 8.2 Võru Test Community Mapping website, and sample responses, November, 2021 Source: Space Engagers.*

### Võru Activities

This Section briefly records activities of the Võru Innovation Playground which are more fully described in the Community Participation Section of this Report, including:

| Category | Event/ workflow |
|---|---|
| Ideation, competitions, and games | Crowdsourcing mobility data |
| | Mapping the Old Town (treasure hunt style, 'crowd-solving') |
| | Urban space visions (Old Town) |
| collaboration and co-creation and learning workshops | Energy Champions |
| | Energy Community workshops (Solar PV) |
| | Renovation Wave workshop with KredEx |
| | Activities in the Old Town |
| | Mapping the renovation use cases with another project |
| Festivals and special events | Bicycle day (May 1) |
| | Võru Folk Festival |
| | City anniversary (august) |

*Table 8.1 +CityxChange T6.3 Event workflows in Võru*

### Võru Data

The Innovation Playground Framework describes Data as "existing or new data relevant to the energy transition that provides an evidence base for the generation, monitoring and evaluation of innovations" (Crowe & Mee, 2020, p. 32). Võru Innovation Playground 'Data' include:

- IES Võru dashboard (DST) data, to be made public.
- National Building Registry data coupled, if possible
- Mobility data collected in a "non-paper" format on mobility outlook
- Third party mobility data from Bolt and Estonian Road Administration
- Data from Energy Audits for public buildings

### Võru Enabling Mechanisms

D3.3 Report, Section 4.1.4, titled 'Enabling Mechanisms', refers to mechanisms that enable stakeholders to put in place different aspects of an Innovation Playground. Four Enabling Mechanisms are provided in the D3.3 Report in the form of 'Protocols', or procedural methods for carrying out a task or procedure:

- Protocol for collaboration and co-creation of an Innovation Playground (workshops)
- Protocol for spatially defining an Innovation Playground
- Protocol for facilitating provision of online tools
- Protocol for co-design of business and investment models in an Innovation Playground

Essentially, 'Enabling Mechanisms', are mechanisms to carry out actions in a systematic way. IN this context, Võru Innovation Playground 'Enabling Mechanisms' include:

1) Digital tools to visualise data, possible solutions and give a close-to-reality feel of the envisaged solutions.
2) Learning and collaboration and co-creation procedures, which bring together civil society, municipality and businesses.
3) SECAP process and development strategy update process started in parallel in 2022

## 8.3.2 Võru Innovation Playground Journey


*Figure 8.3 Võru Journey, sample boundary mapping image, November, 2021 Source: Space Engagers*

As regards steps to support the acceleration to a positive energy city which involved adaptation to local conditions (or localisation) in February 2023, Võru was at the 'activate-ideate' stage of an innovation journey (from observation and sense-making to co-design and prototyping). The Võru Journey included investigating the possible boundary mapping of the Võru Innovation Playground (See image, November, 2021 Figure 8.3). The Võru Innovation Playground Matrix image, (December 2021) (Fig. 8.4) illustrates the spread between digital and 'physical' aspects of the Innovation Playground, and a mix of types of 'Ingredients' from physical (City lab, eg. old buildings) to digital (Civic Tech, eg. parking solutions tech).

Space Engagers assisted in using the Giscloud[2] https://pluscities.giscloud.com/ application to gather information about urban space and mobility routes. We used specifically the template of a previous mapping event that was run in Limerick and adapted it slightly to our case. The take-away was that in principle this tool could work, but would need a slightly different approach since it found use only from a small number of users. So although mapping tools (of Limerick) were used in Võru, to activate/ideate, and accelerate activity locally in the IP, the takeup was low.

Mapping the Old Town (treasure hunt style) - was not deemed useful in our case in terms of observations + sensemaking because parallel studies overtook the information gathering of the other initiative.

Energy Community workshops: one was a walking tour of a renovation project in the old town (in the DA), visiting a specific wooden multi-apartment building. Exchange of experience from the housing union who renovated towards house-owners who want to renovate, was an example of a co-design phase in the Võru Journey.

The other workshop was a world café style event focussing on scoping for themes/topics in the field of energy production and use that would interest citizens. Low participation showed that either the format, the call-to-action in promotional materials, or something else should be adapted to make more use of this platform. It was noted by the people attending the event that some Facebook/social media groups (national coverage) are already providing a good platform for those interested. In terms of observations and sensemaking, It was decided to revisit this in 2023 with a reviewed concept.

Regarding mobility and urban spaces, a 'baseline (prototyping) set of requirements of public realm were co-developed in consultation with stakeholders, (using crowdsourcing platforms to review conditions on the ground), including provision for universal accessibility in all weather situations (including snow) which will have further fieldwork this Spring (2023).

[2] https://pluscities.giscloud.com/

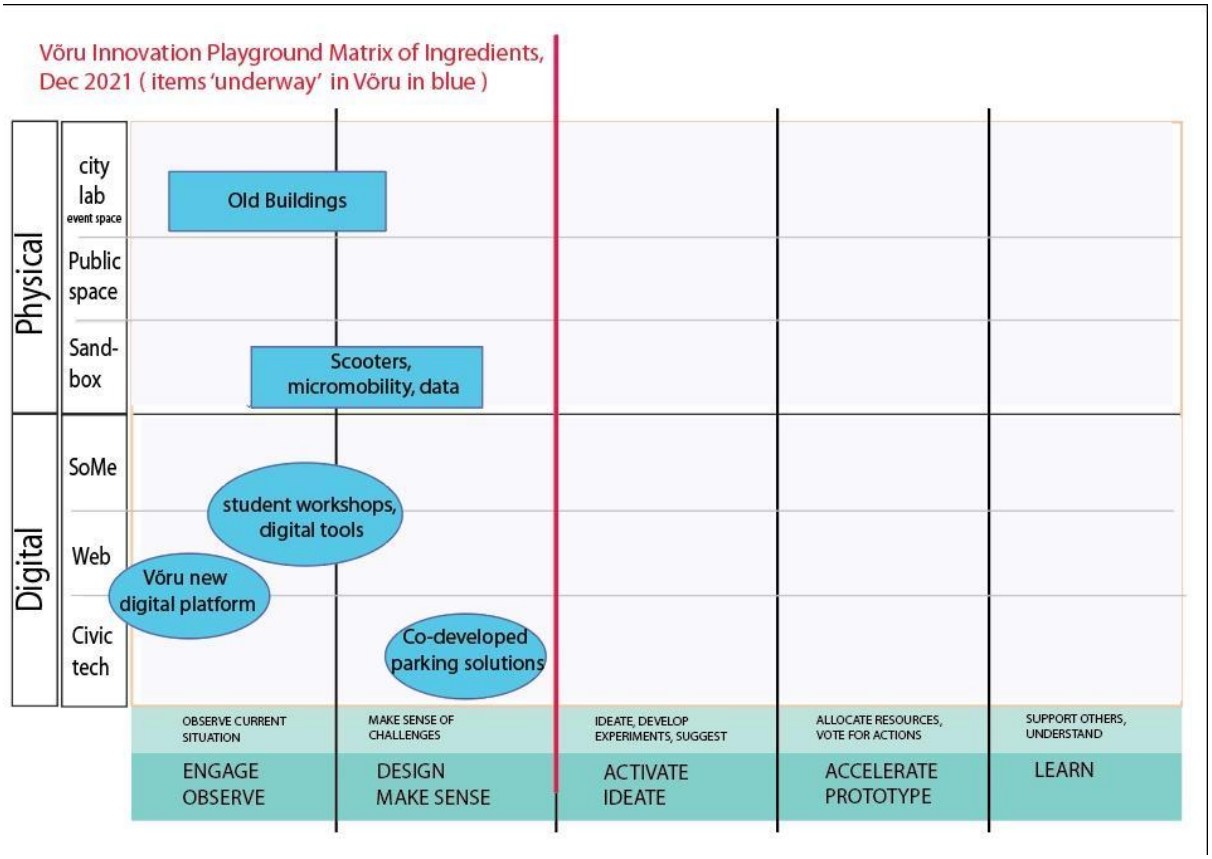


*Fig 8.4. Võru Matrix of Ingredients, April 2022. Source: Space Engagers*

The Võru 'Journey' (MS4 Workshop Tables updated over three 'reporting points', April, 2020, July 2021, and January 2022) is described in the image above. As regards Võru Innovation Playground Boundary changes during implementation, the boundary outline of the Innovation Playground of Võru did not change significantly during implementation. Small additions of land to the southeast and north were added because there was a wish to add buildings that cover all the areas of heritage value, including the Library and Health Centre.

### 8.3.3 Võru Localised Innovation Playground

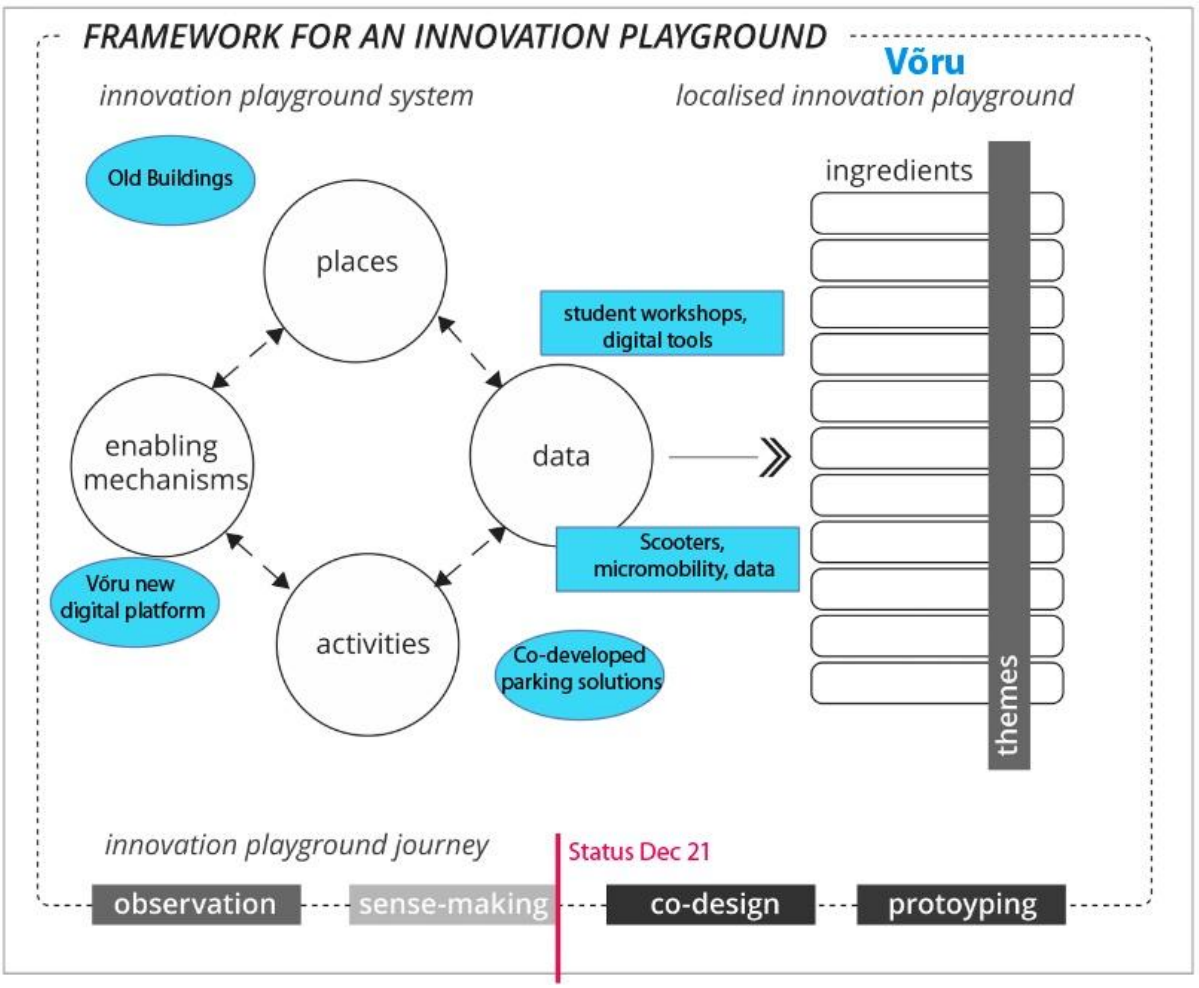


*Fig 8.5. Võru Localised Innovation Playground, December 2021. Source: Space Engagers*

In reporting on T6.3, Subtask Seven (SE) considers CommunityxChange and 'Steps to support the acceleration' towards a positive energy city. In Task 6.3, CommunityxChange, Task description, it is stated that the first steps to support the acceleration to a positive energy city will involve adaptation to local conditions (or localisation), including :

- developing a brief;
- examining precedents;
- identifying user personas - focus on understanding users;
- identifying supports.

In Võru, these Task Steps have been explained as follows:

| Task Steps | Võru |
|---|---|
| developing a brief; | Participatory budgeting project helped to develop the brief locally |
| examining precedents; | Trondheim Innovation Playgrounds (planning activities in Võru was based on Trondheim Reports of theirs, including which activities suit which formats)<br>Limerick Innovation Playground (Mapping formats, events templates, support to implement) |
| identifying user personas - focus on understanding users; | Stakeholders<br>Technology Providers<br>Municipal Authorities (Võru Feasibility Study)<br>These stakeholders were relevant to the 'geography' of the Võru Innovation Playground area because renovation projects in the IP area not typical standard solutions |
| identifying supports. | Võru Municipality resources<br>EU funds to renovate buildings of Technical Feasibility Studies, aligned |

*Table 8.2 Task Steps in Võru (April 2022)*

### 8.3.4 Implementation Results Võru Innovation Playground

The implementation results of Võru Innovation Playground can be categorised into achievement of aims in relation to four aspects: Purpose, Outputs, Outcomes and Performance of Võru Innovation Playground.

| The achievement of the Purpose of the Võru Innovation Playground can be measured in terms of: |
|---|
| Võru Innovation Playground **brings different virtual and physical places and activities related to inclusive and open innovation into a coherent structure**, by for example, supporting building owners to tailor solutions in the Old Town, using the Innovation Playground Matrix and principles. |
| Võru Innovation Playground **facilitates collaboration including between citizens, research institutions, local government, state agencies, businesses and civil society organisations**, for example by keeping a support role to funding processes while building work is happening in a new way, thanks to the +CxC principles, which also led to 'One Stop Shop' principles for example in the Development Agency |

| |
|---|
| Võru Innovation Playground **empowers citizens to actively participate in processes of change**, for example in an event upcoming, concentrating on a new renovation strategy, BCV, energy strategy document formulation, all as part of the geography of the Võru Innovation Playground |
| Võru Innovation Playground **helps to find new, relevant and effective ways of addressing challenges that matter to people** including learnings on how to focus engagement on particular publics, slicing topics 'up in stages', learning from the principles of the Innovation Playground Framework |

| Achievement of the Outputs of the Võru Innovation Playground can be measured in terms of: |
|---|
| Võru Innovation Playground **enables new ways of doing things**, including a dedicated person curating the work on implementing SCIs in the demonstration area buildings and beyond. Furthermore, reformed management of educational buildings (kindergartens and schools) where specialised management positions have been created is responsible, among other things, for innovation and implementing sustainable/energy efficient technologies |
| Võru Innovation Playground **enables new partnerships.** For example, the Innovation Playground process eliminates the negative connotation from 'actively' trying out an idea, asking for assistance and discussing future projects with (private and other) partners outside of the organisation. |
| Võru Innovation Playground **enables (new) places (of innovation)**, including the buildings that have been built/renovated during the project and which are discussed as examples in future projects. |
| Võru Innovation Playground **enables (new) tools and activities (of innovation)**, including Võru mapping and crowdsourcing for data, visualisation of urban spaces (DST tool), and budgeting and financial tools like the technical feasibility study and SCI mapping. |

| Achievement of the Outcomes of the Võru Innovation Playground can be measured in terms of: |
|---|
| Võru Innovation Playground **helps the engagement of a broad cross-section of citizens and other stakeholders** in activities related to their place and local issues by increased number of citizen engagement events, number of participants in those events and dedicated events held for specific citizen/stakeholder groups (different age groups, different types of companies). |

| |
|---|
| Võru Innovation Playground **helps citizens and other stakeholders to feel empowered** and able to influence their place and change things through making available suitable platforms for engagement and promoting their use. |
| Võru Innovation Playground **helps progress in relation to UN Sustainable Development Goals and the Low Carbon Transition**, as through Bold City Vision a connection has been made between the SDGs and what different city departments do. This in turn creates a stronger connection and additional motivation to consider the SDG and LCT framework more often in citizen engagement activities and in everyday work of municipality officials in Võru. |

| The performance of the Võru Innovation Playground can be measured in terms of : |
|---|
| Võru KPI 30 ('number of innovation labs/playgrounds contributing to the creation of DBEP') Current status/potential of introducing an **Innovation Lab in Võru** is still in the planning phase, with ambition for a co-creation and maker place, currently in construction, to be supplemented with human resources, including possibly energy champions as supporters of the physical building in the long term. |
| Võru metrics related to the different stakeholders engaged are available in other Deliverables, and demonstrate **engaged activity** in the Innovation Playground. |
| Võru innovations that emerge include **tailored renovations** in the Võru PEB. |
| Evident **qualitative and quantitative changes in Võru**, include more engaged conversations about the transition, and quantitative changes to renovated buildings are evident in the IP. An upcoming energy data management system will include 'tailored' software development for Võru, which is also an innovation locally. |
| **Võru replications** (WP8, Scaling-Up, Replication and Exploitation), in the Innovation Playground included a Workshop with Tallinn Technical University, explaining the energy use monitoring concepts in the tool, attempting to transfer that knowledge to an Energy Data Models controller, the Regulator, and the Ministry of Economy, who were all in attendance. We also replicated exactly the Trondheim SDG Workshops for municipality officials, student workshop formats, and BCV context of participation events. |
| As regards **Võru dissemination and communications** (WP10, Dissemination and Communication), participation in the Smart City Network of Estonia and sharing the experiences and outcomes there was useful dissemination. Communicating the outcomes of the technical feasibility study and the resulting barriers (e.g. need for new financing models) to the Estonian ministries and other public stakeholders in a specialised event (SEI Forum in Tallinn in September 2022). Articles in the local paper and regular presence in open-air events disseminating project outcomes. |

### 8.3.5 Võru Innovation Playground Conclusions

Participation of Võru in +CityxChange was demonstrated as a positive case of local municipality participating in an EU-funded project during the 2022 Estonian Research Council conference, and the Innovation Playground implementation, including positive cycles of collaboration (where actors can form further collaborations) was part of that success.

Conclusions can be based on Implementation Results of Võru Innovation Playground, and can be categorised into the following three parts : System, Journey and Localisation. Võru Innovation Playground System conclusions suggest that the implemented Võru 'System' ('places', 'activities', 'data' and 'enabling mechanisms'), taken together, have streamlined processes of engagement and change within a geographic boundary. Võru Innovation Playground Journey conclusions (from observation and sense-making to co-design and prototyping) indicate that, though not engaged fully in prototyping yet, Võru is progressing towards it.

Võru Localised Innovation Playground conclusions, after implementing the Map, Ingredients, and Themes of the Võru Localised Innovation Playground, include that fact that the Project supported focus on a particular place under these headings, so the work of change and transition can be ordered into a coherent structure for ongoing transition focussed on progressing the clean energy transition and realising the Bold City Vision of Võru.

# 9 Business and Investment Model

Community-based business and investment models are a growing evolution in the new business concept, being a sort of community-based peer-to-peer production. +CxC project is a starting process and learning experience and of co-creation process, cooperation and energy assets sharing and management. The objective is to bring benefits to all community members not only in terms of money for inventors as primary players and actors.

In +CxC we've worked to develop investors' ' business models as the Trondheim Demo Case where the energy community is a user-client stakeholder. On the other side in Limerick Demo Case it has been designed and developed community-based strategies and business models where energy communities share resources, involve the members of the community as peers and contribute to the investments and management of the energy assets.

Citizens' involvement and participation Business Models

This Section tries to describe the work done and the attempt to move towards community participation business models and how to manage the relation between investors, companies and user communities.

The work provides financial and economic analysis, design and development of innovative and less innovative business models with the support of citizens' involvement and participation and how they can contribute to PEB creation.

These financial and investment models have been adapted in coherence with local community needs and conditions. Cities and involved energy communities have received and they are still receiving mentoring and advice to develop business models on how to bring their ideas towards the creation of Distributed Positive Energy Blocks and the broader market. The path to PEB's implementation in terms of financial & investment solutions is to give Lighthouse and Follower Cities added value to capture stakeholders' engagement and involvement, to discover how their needs could be discussed and exploited. The objective is to connect stakeholders and people and their knowledge, create opportunities for new financial findings and innovation.

+CxC project has ambitious goals and at the same time faces problems and barriers in terms of regulation, stakeholders' involvement, energy communities creation and governance. The basic approach and the best way to achieve the project's business and investment models targets has been described in D2.4, comprising technical, economic/financial, communication/involvement activities to achieve a physical implementation compliant with sustainability that could be integrated with other innovative policies and instruments.

Empirically, now, the characteristic of the applied methodology is a collaboration and co-creation approach, as implemented the Lighthouse Cities , see the Trondheim demo case D 5.16 "+Trondheim Sustainable investments and business models and concepts" and the Limerick demo case in D 4.15 - "Limerick Energy Investment Models White Paper" and in Follower Cities as well, with an active and continuous cooperation process by the

involvement and the negotiation of actions (financial & investment solutions) of potential stakeholders and actors. The approach has been integrated and it's in continuous improvement due to the practises/learnings and changes from +CxC demos deployment in LHCs. The applied methodology has been integrated and improved as described in Deliverable 6.4 - "Report on Investment Pipelines and Novel Business Models for FCs", section "Methodology characterising and benchmarking new business models in FCs", according to developed Business Models and still in an implementation phase in the LHs that could be transferred to FCs. OV Programme and support aims at helping FCs to achieve goals by changing the approach to develop their related business. The methodology (still ongoing) foresees the "mentoring program" with the FCs intended to enable the co-design of business and investment models for providing energy efficiency and RES solutions. Following achieved results in LHs and on the basis of work in progress in FCs, public bodies as municipalities should create and develop innovative solutions for the deployment of a PEB and LEMs in cities. The right place, the physical space, methodology or concept in terms of where to implement this mentoring activity for value creation in our business models and share digital technologies on the basis of what happened in +CxC project could be "The Innovation Playground" (IP).

The IP is a space with moments of training and collective exchange of the the work done, developed and the applied methodology from LHs could be transferred to FCs, where knowledge in a learning context, exploring, researching and integrating different people and knowledge is carried out, and new tailor-made tools for design, analysis and business management are acquired. The Public Body (Municipality, Local Authorities) should be the process-facilitator.

This process should start showing the "Business Cases" in phase of validation from the "Mentor" by using means and tools developed in +CxC project and approved to be tested in the Innovation Playground. The validated model is adopted and adapted according to the PEB needs and shaped according to the life-cycle of the project. The applied methodology in +CxC for supporting Follower Cities has started with a mentoring programme that could be replicated and applied in the Innovation Playground:

- to draw and share strategies and identify tools to support the FC to achieve the goals;

- "prepping the tools": sharing of tools, methodologies and canvas developed in LHs and shared with the FCs;

- meetings, calls, surveys, questionnaires and workshops finalised to transfer on what's going on in the Lighthouses cities in terms of Business models development & potential investment solutions. The activity is started with calls, interview and questionnaires with FCs on PEB investments, including the definition of business and investments models for the establishment of PEB/PEDs in cities, which are going to be co-developed with local communities by cities representatives and with the guide and support from the Mentor.

In terms of work done with Follower Cities in the +CxC project, the work led by OV in cooperation with SE to support FCs, started with an introduction of the basic knowledges and concepts developed in +CxC WP2, Task 2.1 where initial business concepts and models for the PEB and the local markets were drafted, in terms of roles, potential players, relationships and strategies. So, starting from WP2: T2.1 to Deliverable 2.1 and from T2.7 to

D 2.4 methodology, tools and models for launching business and investments in PEBs were defined, alongside with a scouting of funding and financing sources available at European, national and local level.

The objective was to transfer, adapt and replicate what has been done and achieved in the LHs cities of Limerick and Trondheim to the Follower Cities. This process will be duly and described in Deliverable 6.4: "Report on Investment Pipelines and Novel Business Models for FCs", where bespoke models for the planned interventions have been in part developed and it will be finalised soon. Such work and results have taken into account local conditions and changes in the regulatory framework to deliver innovative models to be used also as guides for replication. Business and investment models in the FCs have been conceived as co-working with local communities, with the guidance of OV according to the mentoring scheme proposed in D 3.3 "Framework for an innovation playground". T6.5 is keeping this way of working and main findings are and it will be soon available in Deliverable D6.4 still in progress and finalised for March/April 2023.

In details, main steps and work phases provided by OV with and for the FCs are listed below:

1. Energy and investment data collection also with interviews
2. Questionnaire on the status of FCs work
3. Financial & Funding Options Tracker design and development (this is a continuous activity).
4. Feasibility studies review
5. Business modelling (T6.3, mentoring) and FCs support
6. Financial & Fundings options scouting, fund-matching and investment modelling.
7. Tools for financial-economic and ESG[3] analysis (tables, canvas, templates,etc.) design and replication for co-development in the cities and monitor progresses
8. T6.5 - Business planning: including sustainability assessment and ESG scrutiny of models developed by the cities in T6.3.

With regards to the mentoring scheme, according to D3.3 "Framework for an Innovation Playground" it can consist in the provision of:

- knowledge from LHCs and from OV experience;
- tools for development of models (canvas, tables);
- monitoring (questionnaires, templates);
- support for implementation of crowdfunding (models, portals).

Mentoring activities consisted also of shared understanding documents, specific Workshops on investment for each FC, which were held in the period July to December 2020. In January 2022 another Workshop titled "Methodology characterising & benchmarking new business models in FCs" was organised by OV with all FCs participating. The objective was to support +CxC FCs in defining new business models & look for funding solutions to implement PED/LEM - on the basis of what was done in LHs cities.

In conclusion, Community energy participation to be promoted and fostered needs financial schemes and regulation support. In recent years, especially after the Covid-19

[3] ESG (Environmental, Social and Governance)

crisis, the EU has implemented further financial and legislative tools like the Cohesion, the Recovery, Resilience Fund and Facility and the Clean Energy Package (REDII).
In +CxC project, both for LHs and FCs, Business and investment models have been designed including community energy initiatives and citizens' participation and related lessons learnt have faced a series of positive impacts, opportunities, obstacles and difficulties. For example one of the main related obstacle has been the broad agreement and public acceptance in terms of RES sites (see the forthcoming Deliverable "D4.15 - Limerick Energy Investment Models White Paper" case of Limerick Tidal Turbine , paragraph 4.1.1 "Tidal Turbine Energy Power Plant (TTPP)"). Positive effects have been perceived in terms of local economic growth, flexible and local energy grid (see +CxC Develivarable 5.16 "+Trondheim sustainable investment and business concepts and models", paragraph 3.1 "LHC Trondheim Positive Energy Blocks").
Community participation also in terms of financing commitment, as it happens with the Renewable Energy Community, incentives citizens to cooperate and participate, reducing local social barriers and helps to tackle energy poverty. Another possible option for financial scheme solution could be to set-up regional or local One-Stop shop Shops and EU Energy Community and Financing facilities. Community financial participation, as the case of the REC in Limerick, could be to establish and create a Guaranteed Revolving Fund (see Deliverable "D4.15 - Limerick Energy Investment Models White Paper" sections dedicated to Guaranteed Revolving Fund) to finance energy infrastructures and assets.

Lessons learnt, good and "bad practices" arising from EU projects like +CxC are an opportunity for policy makers and the European Commission to ensure state aid rules and increase community financial support to develop energy projects and interventions.
The Energy Community should have knowledge and easy access to European Commission investment tools like the European Fund for Strategic Investments and the EIB (European Investment Bank) with facilities like ELENA (European Local Energy Assistance) or JASPERS.
Another tangible lesson learnt for the energy community financial scheme is that the energy project has a low interest/cost of loan and it can be supported by a Grant in case of financial difficulties to be implemented. Energy Communities should benefit from addressed and dedicated financing support mechanisms and schemes such as the feed-in-tariff.

# 10 Discussion

In considering community participation, innovation playground, and business and investment models reporting together, some discussion of key lessons and learnings for other cities is presented here. Each of the five cities discusses these aspects.

## 10.1 Alba Iulia

In considering them together, the Alba Iulia Community Participation and Playground conclusions demonstrate the eagerness of the city to follow the path of sustainable development. Alba Iulia Community Participation and Open Calendars has been of great support for identifying citizen needs and possible solutions in relation to PEBs, in particular, for the elaboration of the Integrated Urban Development Strategy. Community collaboration and co-creation measures in Alba Iulia have ranged from Public Consultations to citizen participatory processes. They have successfully empowered their citizens in having their say regarding Smart City Plans and public spending.

Some Lessons and Learnings from Alba Iulia Innovation Playground

Even if Alba Iulia tried to narrow the Innovation Playground into a specific area of the city, respectively the Alba Iulia Fortress, the emotional centre of the city, the city decided in the end that the Innovation Playground is the whole city. Being a compacted town with only 75,000 inhabitants and innovation happening all over the city, to consider only the Citadel as an Innovation Playground would be unfair and incorrect.

Conclusions can be based on Implementation Results of Alba Iulia Innovation Playground, and can be categorized into the following parts:

Alba Iulia Innovation Playground System conclusions: The Innovation Playground benefits of more than 50 mil. Euro in terms of investments on smart public lighting, smart mobility, smart micro-mobility, smart solutions and data platforms developed by the municipality. We can talk about an integrated system of solutions given the fact that the smart mobility and smart lighting projects implementation is happening at the same time and both will benefit smart managing solutions.

Alba Iulia Innovation Playground Journey conclusions : Alba Iulia has done extensive work on digital transformation and innovation in the last 15 years. The smart city strategy developed in 2020-2022 defines Alba Iulia as a city prepared to become a smart city and to benefit from the digital transformation and highly innovative projects. This way the Innovation Playground covers all the surface of the city, to be more inclusive, more extensive and more dynamic.

Alba Iulia Localised Innovation Playground conclusions: As said, the area of the Innovation Playground changes since the first discussions, from a dedicated space – The Alba Iulia Citadel – to the whole city, in order to have a wider inclusion of the entire municipality. The lesson learned was that all citizens, big companies and SMEs, NGOs and local institutions that develop smart solutions are part of the big process of the innovative transformation of

the city. For other cities implementing a Localised Innovation Playground, and for the EU Commission to consider how to benefit from the localised learning experience in future energy projects, some comments on conclusions and learnings from Alba Iulia include;

Alba Iulia has the most interesting history in terms of smart city and smart development direction. Alba Iulia was the first city in Romania to heavily test the smart city concept by creating partnerships with 45 private companies in order to test smart solutions on the real infrastructure of the city. Being a champion in attracting EU funds in Romania, Alba Iulia managed to attract everyone's attention when decided to test the biggest smart city pilot back in 2017.

This initiative opened lots of doors for the city, being recognized, at local, regional, national and international level as a pioneer that has the boldness and the ambition to head the right path of development: the sustainable one. „Follow and learn" is the new narrative of Alba Iulia Municipality since we are part of lots of EU projects that have good practices with change as an aim and main benefit.

Digitalization and innovation concepts, even in early stages for lots of cities in Romania, for Alba Iulia is the „new normality" given the experience we benefited from the smart city pilot experience. In conclusion, Alba Iulia`s choice to map the Innovation Playground and the whole city level is extremely relevant because at the whole city level new smart city interventions and innovation projects are implemented.

## 10.2 Písek

Some Lessons and Learnings from Písek Innovation Playground

For other cities implementing a Localised Innovation Playground, and for the EU Commission to consider how to benefit from the localised learning experience in future energy projects, some comments on conclusions and learnings from Písek include;

The Innovation Playground journey in Písek is shaped locally and with the help of citizens now as more and more of them are getting involved either through participatory budgeting, crowd-solving or voluntarism.

Písek is mostly focused on schools and the city centre. There is an emphasis on education of citizens using different methods of communication and workshops and public events. The municipality is also more engaged as they participate in person in different workshops and we discuss common goals.

## 10.3 Sestao

Some Lessons and Learnings from Sestao Innovation Playground

In considering community participation, Innovation Playground and business and investment models reporting together, successes and learnings of Sestao for other cities can be observed:

In reflecting on successes of the community participation in Sestao, in general terms, Sestao´s workforce is largely a blue collar one, average education levels are lower than in other regional municipalities and in general, there are greater socio-economic stresses than in other Basque cities. These factors however, do not affect, at least not in a negative manner, the willingness of the citizens in wanting to take part in community participatory events (as long as the event itself gets disseminated properly). As a matter of fact, historically, the citizens of Sestao have a reputation for being highly vocal, organized and demanding of tangible results. (This reputation became particularly famous during the 80´s, where factories were closing down at a large scale, which caused large-scale social upheaval in the municipality, but it existed already before as workers requested through unions better working conditions all along the 20th century).

Thus, we can conclude that Sestao happens to be an excellent fertile ground for implementing innovative and participatory projects. This could potentially give it the opportunity to leapfrog, in a not-so-distant future, cities like Bilbao itself in terms of what can actually be achieved relating to energy and sustainable-linked advancements. Its small to medium size, plus the willingness, on behalf of the municipality itself and its partner Sestao Berri, to strive towards being dynamic and ambitious in their undertakings, allow for surprising results to take place and draw the attention within the region, and beyond, with many of the the end results that get achieved.

During 2022 Sestao entered the Red Innpulso network (supported by the Ministry of Science and Innovation) which is comprised by a select number of municipalities in Spain that are able to demonstrate meaningful results in their drive towards implementing innovative projects (cities that are not able to maintain a minimum level of innovation while in the group are invited to leave it). This distinction comes along with getting the support of a full time person that is dedicated to pursue innovation for the municipality during a 2-year time period. The city is currently in the process of selecting this person. They will focus on sustainable and positive energy projects and work in a cross-departmental manner, while liaising with stakeholders and citizens.

As for the Sustainable Wikipedia, in Sestao it is seen as a great success that, not only has the project been selected for receiving a grant by the Basque Government, it has also been selected with one of the largest amounts of grant money given inside the project line that was applied to (line of Local EcoInnovation). The fact that, already at this early stage of development, there are talks with the Basque Government about possibly scaling it up from Sestao to the rest of the Basque Country, and that money is being given to help prepare a European project with it, is also a testament of the high impact (and expectations) that are set on the future of this project. Depending how the project evolves, at present it is seen as a possibility that this tool might become an international recognized point of reference for finding quickly and easily relevant sustainable information that is applicable to one's specific professional activity and lifestyle.

In Spain, energy communities are increasingly being spoken about and actual installations have already started to go up. However, they overwhelmingly tend to be individual projects

spread apart. The fact that in Sestao we will soon have 8 energy communities rise up almost simultaneously is rather unheard of and shows the city's commitment towards meeting it´s 2030 and 2050 carbon reduction goals. Also, these energy communities are intended to represent a starting point. The ambition is for many more to follow. In Sestao it is strongly believed that energy communities make environmental, social and economic sense, therefore, the more and the sooner, the better.

The industrial heritage aspect of the project in Sestao demonstrates that the local specificity of the Innovation Playground can add distinctiveness when presenting work to others, and has led to an interest in joining industrial heritage tourism and sustainability as features of the Sestao economy in the future.

Something that we feel proud about in Sestao, that possibly may inspire other cities, is to think ambitiously and when needed, outside the box. Also, to think and have the goal to try to create a positive impact that is as big as possible, in the city itself, but also beyond. We all live on one planet and under one and the same atmosphere. Making use of innovative digital tools and sharing valuable knowledge is one example that we believe that this can be done. Collaborating with leaders in the private, public, education/research sectors, as well as with citizens, is also a way to increase the chances towards hopefully ending up with good results.

Engagement depends on clear communication in non technical language, relating technical topics and energy concepts to local situations. Language and terms used in the project (Eg. 'playground', PEB, etc) need to be translated into the local language, Spanish mainly, especially considering the overall low level of English proficiency among the citizens and even business owners, university graduates, etc. Having some content in Basque would also represent an important emotional plus for many people and make the project feel ´closer´ to them and help accelerate/increase levels of engagement.

## 10.4 Smolyan

Some Lessons and Learnings from Smolyan Innovation Playground

Community participation and Innovation Playground implementation in Smolyan are characterised by effective engagement of citizens in collaboration and co-creation activities and stakeholder diversity, and the Smolyan Innovation Playground is characterised by an emphasis on municipal buildings, and activities targeting youth. Smolyan municipality have collaborated with a great variety of local stakeholders and even with other h2020 funded projects, benefiting the quality of the resulting final measures of the community collaboration and co-creation activities. They have made great efforts building civic capacity through participation regarding SDGs.

Smolyan has greatly benefited from D3.2 where recommendations and best practices for community engagement were established. Smolyan has learned that effective engagement is achieved through stakeholder diversity, fun and creative activities, and continuous communication, for example through their municipality website, facebook and a digital

screen on one of the main squares in the pedestrian zone of the city centre. Learning activities focusing on youth (following D3.4 and D3.5) such as City Lab, Climate Fresk, Open Lessons with Horison Energy Kit and Designing the City of the Future, are resulting in students being empowered to lead and influence decision-making in creating the Bold City Vision 2050.

## 10.5 Võru

Some Lessons and Learnings from Võru Innovation Playground

For other cities implementing a Localised Innovation Playground, and for the EU Commission to consider how to benefit from the localised learning experience in future energy projects, some comments on conclusions and learnings from Võru include;

Translating the term 'Innovation Playground' into Estonian was easy, 'Uuenduste mänguplats' (the literal translation). Citizens understand it as a space where you are able to play around with ideas and concepts without being afraid of negative consequences.

Mandate from the executive part of the local municipality government is essential and should be coupled with adequate resources (additional people and funds for organising events) - this establishes the purpose and expectations and resources ensure delivery.

A conceptual approach, like the Innovation Playground, helps to convey understanding of both how internal innovation processes work and how to work with external stakeholders in understanding issues and scoping for solutions. Demonstrating how various stages of innovation work together divides the 'effort' into smaller bits that the stakeholders from outside the organisation are able to relate to and work with.

## 10.6 Lessons Learned across all Follower cities

This Report has already described all relevant community participation and citizen engagement measures undertaken in order to promote development of DPEBs in FCs, outlined implementation of innovation playgrounds, and reported on enactment of business and Investment models in five Follower Cities. In implementing collaborative intentions of D9.1, Framework for intra-project collaboration, a learning framework, based on open innovation, (which promotes fostering a collaborative approach among +CityxChange partners and with external stakeholders), cities learned the value of the cities network for localisation and implementation. Here, following Key Lessons and Learnings of individual cities, (above), broad lessons learned across all Follower Cities (considered together) are now described.

### 10.6.1 Community Participation and Engagement

In briefly discussing Community Participation and Engagement, a short overview on characteristics of the cities helps to illustrate lessons learned. For example, Alba Iulia has

achieved citizen trust and credibility in the participatory budgeting platform; the last edition has double citizen participation rates. Participatory budgeting will be growing in the coming editions, together with citizen trust in Alba Iulia municipality. Proposals were related to the creation of PEBS, such as building green spaces in a city neighbourhood and creating dedicated bike lanes. Public consultations have been a great tool for identifying citizen needs and possible solutions in relation to PEBs. Participatory budgeting together with public consultations have benefited from each other's success regarding citizen engagement.

Lessons learned for Alba Iulia include the need for keeping organising informative sessions with local communities regarding localising the SDGs, which also aims to keep supporting stakeholders in implementing the Bold City Vision framework. Resulting in the quality of the final measures of any community collaboration and co-creation event. Additionally, Alba Iulia will greatly benefit from improving continuous communication with citizens and implementing an open data approach to keep gaining credibility in the participatory tools and events.

In Písek, the municipality has been improving collaborations with different stakeholders which is resulting in diverse communities being able to influence city decisions and being involved in solving local issues. They have successfully empowered their citizens in having their say and learn regarding community energy and public spending (Participatory Budgeting, Public Consultations, Informative sessions, etc.). Digital communication channels are already in place and continuously being improved based on the citizen reviews. Písek municipality has been able to raise awareness regarding community energy consumption in an inclusive and effective way.

Lessons learned for Písek include the need to complement digital communication channels with outdoor communication campaigns to extend the reach of their engagement. Continuous communication to keep the citizens informed regarding for example the implementation of the projects to be financed in the participatory budgeting, is key to strengthened citizen trust.

Sestao municipality has made great efforts celebrating open engagement events and collaborative legislation processes. In particular, Sestao has effectively engaged citizens in two collaborative legislation processes. Sestao has achieved a broader engagement approach including private companies, universities and other public institutions.

Lessons learned for Sestao include the need for keeping organising informative sessions with local communities regarding localising the SDGs. The citizens need to know how their feedback affected the city's strategic documents, therefore continuous communication and transparency is again key in the success of the collaborative legislation process.

Smolyan municipality has organised creative and fun informative sessions, workshops and engagement activities focusing on children and young people. Topics such as climate change, renewable energies, green spaces and energy sources were learned through games and creative workshops. Children and young people were able to give their vision of

the future of their city. Smolyan has been able to increase stakeholder diversity, they have even collaborated with other h2020 funded projects. Smolyan municipality has made great efforts in citizen engagement, including children and young people, by organising many successful community collaboration and co-creation measures (public engagement events, informative sessions/events, open days events, the citizen observatory, PED talks, collaborative legislation processes, city lab, photo voice event, mapping events and more ). All these efforts are making a real difference to their city and citizens for the better.

Lessons learned for Smolyan include: since outdoor communication campaigns are already in place then online communication campaigns need to be strengthened to extend the reach of their engagement. It would be beneficial to consider an online tool for centralising open calendars.

Võru municipality has celebrated several community collaboration and co-creation measures including public engagement events, co-design workshops and narrative tours. They have strengthened social media communication as well as outdoor communication campaigns.

Lessons learned for Võru include the need for organising informative sessions with local communities regarding localising the SDGs. In relation with all the community collaboration and co-creation measures celebrated by Võru, the events need to be transparent and the information openly disseminated. The citizen needs to know how and when this information is used to make decisions at a local level, such as how they affect city strategic documents. Additionally Võru plans to revisit 'D3.2 Delivery of the citizen participation playbook' in order to: improve effective and inclusive community engagement, and to use the most suitable participation tools (physical and online) when developing community collaboration and co-creation activities and open calendars.

### 10.6.2 Innovation Playground

Distinct variation in local implementation of Innovation Playgrounds was already evident in LHCs: formal designation, geographical size, local political involvement, citizen participation variations. In implementing Innovation Playgrounds in FCs, one lesson relates to expectation: the idea that learnings from LHCs will seamlessly transfer to other places seems optimistic at best. Formal designation of the concept of Innovation Playground varied in the Follower Cities. So, while in Võru the concept translated into Estonian easily, and was well understood locally as connected to the transition and energy, other cities, like Sestao, discovered that underplaying the framework definitions and concepts (while still adhering to the framework) worked better locally.

Although the municipal boundary formed the boundary of all five Innovation Playgrounds (of Sestao, Smolyan, Písek, Alba Iulia, and Võru) the geographical size of implemented Innovation Playgrounds varied a lot, from the largest (Smolyan) to the smallest (Võru). However geographical size was not necessarily an impediment to realising the concept if the stakeholders and citizens were focused on the aims. Local political involvement in implementing Innovation Playgrounds depended to some extent on local interpretations of

the concepts, but all FCs municipalities adhered to the structure of the Framework to varying extents. In Smolyan, the local Energy Strategy and Action Plan (BCV), spatially focused in the Innovation Playground, was 'adopted' by the city. Citizen participation variations are explained through Community Participation and Engagement descriptions above.

### 10.6.3 Business and Investment Models

Capacity building exercises led by OV with FCs have been organised during the on-line meetings and workshops. Starting from FCs feasibility studies and plans, Business Models and investment solutions have been identified and drafted. In relation to learnings, for the work done and still on-going, additional training and mentorships activities are necessary for the next future with a focus on a larger scale implementation. The work aimed at identifying good and "bad practices", strengths and solutions, weaknesses identified and developed in the Innovation Playgrounds, so in terms of learning, meetings and workshops have been useful and above all the occasion to exchange know-how and lessons learnt among the partners the level of bankability and solutions' scaling up. The co-working method and process among OV and the FCs has provided and still gives the Follower Cities the possibility to apply financial-economic Tools to assess the interventions on what has already been done for the LHs. Business Models canvas have been applied in Písek for example to design the Battery Business Model.

This mentoring and coaching work is still ongoing and in a short term, considering that D4.15 and D5.16 have been finalised, joint work among Innovation Playgrounds, with a series of online workshops and other WP6 activities, will be organised by OV with the goal of exploitation of the main key exploitable results.

For future take-up, Follower Cities need more energy efficiency and RES investments, standardised rules and laws, and in particular for their development towards PEB implementation, they should consider the following aspects:

- Cities should not only focus on economic-financial aspects but also ESG factors above all in the decision making process
- Investors with financial capability are necessary and Public Bodies should operate as facilitators to support them in finding financial and investment solutions
- Structured ownership and governance also to need to mitigate and balance financial risk
- Access and support for financial schemes for SMEs are necessary

The Innovation Playground in Limerick is a tangible example of a business model at EU level where the REC (Renewable Energy Community) can use an innovative demo project for the community.

In relation to the Innovation Playground concept, and possible financial solutions, Follower Cities experience has brought into the project different aspects, peculiarities but at the same time common elements and needs.

Taken together, the way that the implemented Frameworks make the PEBS happen, including community participation and Innovation Playground implementation, as well as learnings on business and investment models, these initiatives in turn contribute towards making the energy transition happen. The impact of the work was measured by recording carefully the engagement and participation locally, collating information on implemented Innovation Playgrounds in five cities, and collecting feedback and progress reports on business and investment models as they were deployed. The Project changed, amongst other things, mechanisms of working within municipalities, methods of engagement and public participation, and ways to 'see' and perceive the spatial link in the conversation to places, through considering public and collaborative mappings of local geographies, ultimately related to positive energy and the transition. Dissemination included many Partner and public meetings and publications, as well as local and national media communications. Scaling up potential was tested locally (eg. Sestao Wiki) and possible adaptations (eg. multiple Innovation Playgrounds in one city) were explored.

## 10.7 Future Directions

### 10.7.1 Community Participation and Engagement

Lessons learned shared by all FC in community participation and engagement include:

- Informative sessions are an essential tool for the municipality. Citizens can learn about their community, their city, sustainability measures, renewable energy, localising SDGs, their municipality, and more.
- Continuous communication, transparency and open data will help gaining credibility by the community, information to be reused by other institutions or communities and to foster citizen participation.
- Face to face activities such as Go & find citizens, Narrative tours and Gamification (see D3.2 Delivery of the citizen participation playbook) show a proactive attitude and real interest in the municipality in getting in touch with their citizens.
- Stakeholder diversity
- The need for getting citizen's feedback after the celebration of every community collaboration and co-creation event in order to keep improving the quality of the activities.

Using an online tool for centralising open calendars, future Community Participation and Engagement initiatives and plans can build on the lessons learned to date.

### 10.7.2 Innovation Playground

In relation to a future roadmap for the Innovation Playgrounds, there is definite potential to link the geography of these places to tax incentives, promotion of innovation clusters, and general public awareness of the advantages of focusing attention in one part of the city on energy, transition and innovation, together.

Future directions could include additional Innovation Playgrounds in Follower Cities (Trondheim has four, all Follower Cities have one each), with particular focus on certain 'specialisms (Eg, Trondheim University Innovation Playground, research, etc). However, any

developments from framework and implementation would need to highlight things that 'worked' and will bring FCs 'forward', as discussed in this Report. It is also important to make sure the 'narrative' makes sense for the public, and to describe how things learned are applicable to other cities and jurisdictions. Disseminating the work, including highlighting local 'distinctions', (eg. Smolyan Energy Strategy and Action Plan (BCV)) 'adopted' by cities within an overall strategy helps to demonstrate to the Commission, other cities and the wider public to think about researching, managing, innovating and funding the transition in future.

### 10.7.3 Business and Investment Models

In +CxC the Business modelling FCs experiences has shown/demonstrated that Cities are more focused on technical and technological aspects and other features instead of business, financial and investment skills and competences. In the future, the PEB process development and implementation should foresee more financial and economic experts to design and make the PEB financially attractive, to scale it up and make it replicable.

The ambitious goal-objective in +CxC both for LHs and FCs has been to make the projects-investments-interventions attractive to potential investors (buildings owners, third parties, ESCOs) in the future. During the project, OV have identified some actions-steps and products towards PEB creation, as it follows:

- a feasibility study which contains interventions and technologies and related value of the investments
- a business case which shows how technologies and innovation matches the PEB ecosystem;
- an implementation phase with the Business models including project costs and revenues and related the profitability to convince investors and/or viability for Public Bodies.

All Cities have sought support for Grants and Financial Schemes to provide for their investments. In particular, in this last year, for the Resilience Fund Plan, this financial scheme has boosted and activated energy efficiency and RES projects-investments.

For example, **Alba Iulia Municipality** (already beneficiary of RRF call) is waiting to receive Grants for the Tech College (the most important investment-building) as described in the feasibility study.

The **City of Písek** is developing battery business models and still waiting for the National Act which is a regulatory framework needed in the City.

**Sestao** has received assistance in applying for EU funds, in particular EEEF (the public bidding should be launched in April). In the City already tangible results have been achieved, OV has also supported the municipality for financial solutions for Escuela De Aprendices. OV wants to bring the Business model-experience on energy storage on the basis of what was implemented in Trondheim.

For the **City of Smolyan**, the Limerick financial-investment tool analysis for buildings has been adapted to Smolyan.

Concerning **Võru**, they highlighted a lack of public funds and a need for financing solutions, maybe with private players, but the limit and the main difficulty is they are a small city with little capacity to implement innovative financing. They asked for OV support on EPC development - documents, events, workshops, expertise.

# 11 Conclusions

This Report has described the development of a spatial and socio-economic framework for each Follower City, in which municipal authorities, energy providers, businesses, citizens, and communities connected with each other, to ideate, develop and test urban prototypes and beta projects, get help to nurture their ideas into maturity through crowd-solving, crowd-funding and match-funding, and receive mentoring to develop business models to bring their ideas towards the creation of DPEBs and the broader market. Collaboration and co-creation were at the centre of this process, following four particular concepts and language which are considered integral to Open Innovation 2.0, an important principle in the +CxC Project ('Shared Value', 'Quadruple Helix', 'Innovation ecosystem', and 'Orchestration'). As Bold City Visions are implemented locally, the community participation and engagement activities, implemented Innovation Playgrounds, and tested Business and Investment Models will start to align in progressing positive energy initiatives and the overall transition locally and beyond. Future deliverables, including those on replication and data, will demonstrate other learnings for other cities and future researchers. And although some deviations occurred, related to crowdfunding for example, as discussed in the Introduction, in general the Task was completed successfully.

CommunityxChange WP3 frameworks have greatly influenced community participation and engagement activities celebrated by all FCs. FC have achieved inclusive engagement (including children and young people), foster citizen participation by gaining credibility through continuous and open communication, and the development of PEBs in their communities. Citizens are being empowered to lead and influence decision-making and make a real difference to their municipalities for the better. Citizens are well-informed participants,  thanks to FC municipalities openly sharing the process and results of each community collaboration and co-creation measure. FCs are getting better in engaging citizens and organising participation events, for that citizens feedback is essential. Implementing open data and a centralised approach for open calendars and a citizen participation platform will be achieved over time. We encourage FCs to keep up their great work, and to keep gaining experience in the citizen engagement process by showing a proactive attitude and real interest in getting in touch with them.

Distinct aspects of implemented Innovation Playgrounds demonstrated how the Framework could be localised in different, but equally valid ways in cities. Alba Iulia`s choice to map the Innovation Playground at the whole city level promoted the idea that citywide new smart city interventions and innovation projects are implemented in a coordinated way. In Písek, an emphasis on education of citizens using different methods of communication and workshops and public events led to the municipality becoming more engaged as they participate in person in different workshops, and common goals are discussed. In Sestao, a theme based focus (eg. industrial heritage, sustainability wiki) kept city officials and citizens clear on the socio-economic scope of the framework for the city. In Smolyan, combinations of official (municipal) and informal (community) mappings of the Innovation Playground kept the citizens and stakeholders focused on the need to keep the spatial characteristics of the

concept in mind. In Võru, translating the term 'Innovation Playground' into Estonian was easy, ('Uuenduste mänguplats', the literal translation), and citizens came to understand it as a space where you are able to play around with ideas and concepts related to energy without being afraid of negative consequences. Võru also learned that a mandate from the executive part of the local municipality government is essential and should be coupled with adequate resources (additional people and funds for organising events) - this establishes the purpose and expectations and resources to ensure delivery of the energy transition.

As regards Business and Investment Models, the replications from LHCs are not implemented fully yet, so it's early for final conclusions in relation to business and investment models. Later Deliverables will represent successes and learnings in a more comprehensive way but some conclusions can be listed and described anyway. In particular and in conclusion, the work done in the IP, and in particular working groups, have supported the analysis of different approaches and methodologies to implement common RES and EE project structures. The possibility to see and analyse how demo projects in the FCs have been realised as a participatory process has been a tangible lesson learnt in +CxC project. These spaces have been a "pool" to favour the project's outputs and results where participants improved their skills and knowledge. This means that a "shared space" to promote the project's outcomes and results for collaboration and co-creations is necessary. These places should attract, and be of interest for, experts from universities, policy makers, SMEs, investors and of course citizens. Actors and players operating in a City, PEB or LEM searching Innovative investment solutions and financial schemes should focus and find better methods for communication and cross-initiative collaboration instead of competition and stimulate collaboration, especially on further replication and scalability.

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