



TOWARDS SMART ZERO CO₂ CITIES ACROSS EUROPE
VITORIA-GASTEIZ + TARTU + SØNDERBORG

Deliverable 2.6: Citizen Engagement Strategy and deployment plan

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Table of content:

- 0 Publishable Summary 9
 - 0.1 Citizen Engagement Strategies 9
 - 0.2 Social Innovation Model 9
- 1 Introduction10
 - 1.1 Purpose and target group.....10
 - 1.1.1 Citizen Engagement Strategies10
 - 1.1.2 Social Innovation Model10
 - 1.2 Contributions of partners11
 - 1.3 Relation to other activities in the project12
- 2 Objectives and expected Impact.....13
 - 2.1 Objective13
 - 2.1.1 Citizen Engagement Strategies13
 - 2.1.2 Social Innovation Model13
 - 2.2 Expected Impact14
 - 2.2.1 Citizen Engagement Strategies14
 - 2.2.2 Social Innovation Model14
- 3 Overall Approach.....15
- 4 Phase I – Conceptualization17
 - 4.1 Citizen Engagement Strategies17
 - 4.1.1 State of Art17
 - a) Smart Cities and Communities Strategic Implementation Plan17
 - b) Citizen Engagement Strategies as processes18
 - c) Strategies depending the perspective: land-use planner, community developers, marketing teams.....20
 - d) Designing Strategies21
 - e) Citizen Engagement Strategies and Climate Change22
 - f) Citizen Direct and Indirect Participation24
 - g) Public and Private domains in environmental practices24
 - h) Citizen Engagement European Best Practice Collection24
 - i) Citizen Engagement when there is a Product Service Behind26
 - 4.1.2 Participatory observation27
 - a) Definition27



- b) Typologies.....27
- c) Application of the participatory observation28
- 4.1.2 First Questionnaire28
- 4.1.3 Conclusions29
- 4.2 Social innovation30
 - 4.2.1 Definitions and concepts for the SmartEnCity context30
 - a) Perspectives on innovation.....30
 - b) Attitudes towards technology and innovation diffusion.....32
 - c) Smart systems and technology34
 - d) Sustainable behaviour.....36
 - 4.2.2 Understanding attitudes towards environment and technology38
 - a) Study outline38
 - 4.2.3 Developing motivation schemes and experiments.....40
 - a) Incentives and motives for behavioural change40
 - b) Basis for the experiments42
 - c) Descriptions of the experiments42
 - d) Seminars with consortium44
- 5 Phase II – Prototyping45
 - 5.1 Citizen Engagement Strategies45
 - 5.1.1 Extraction of essential elements of Citizen Engagement45
 - 5.1.2 Link the essential elements between each other45
 - 5.1.3 Key Areas Specifications.....46
 - a) Citizen Engagement Strategies (How).....46
 - b) Key Actors and Roles / Formal and Informal Leadership (With Whom)46
 - c) Target Groups (To Whom)50
 - d) Activities, materials and channels for the citizen calls (What)52
 - e) Value Proposition (What)53
 - f) Governance (Who).....55
 - g) Spaces; Online & offline (Where)56
 - h) Purpose (Why)57
 - i) Reshaping Value Proposition (Feedback)57
- 6 Phase III – Construction58
 - 6.1 Mapping the Citizen Engagement Strategy of each LH City58
 - 6.1.1 Process description58



- 6.1.2 Second Questionnaire: questions per Key Area59
- 6.1.3 Third questionnaire: Identifying and Fulfilling the information gaps.....59
- 6.2 Citizen Engagement Strategy Organization Model Application60
 - 6.2.1 Tartu Citizen Engagement Strategy and Deployment Plan60
 - 6.2.2 Sonderborg Citizen Engagement Strategy and Deployment Plan.....74
 - 6.2.3 Vitoria-Gasteiz Citizen Engagement Strategy and Deployment Plan84
- 6.3 Neighbourhood Organizational Systems in LH Cities97
 - 6.3.1 Tartu case97
 - 6.3.2 Sonderborg case.....99
 - 6.3.3 Vitoria-Gasteiz case100
 - 6.3.4 Conclusions100
- 6.4 Conclusions and Evaluation for the 3 LH Cities101
 - 6.4.1 Tartu LH CES Model application101
 - 6.4.2 Sonderborg LH CES Model application102
 - 6.4.3 Vitoria-Gasteiz LH CES Model application103
 - 6.4.4 Creation of subcategories under the Key Areas104
 - 6.4.5 Evaluation108
- 6.5 Recommendations for the Follower Cities or other Replication Models111
- 7 Deviations to the plan.....115
 - 7.1 Citizen Engagement Strategies115
 - 7.2 Social Innovation Model115
- 8 Contributions for other WPs116
 - 8.1 Key Performance WP7.....116
 - 8.2 Monitoring and Evaluation WP7116
 - 8.3 Value Proposition (potential for WP3, WP4 and WP5).....117
 - 8.4 Integrated Planning WP2117
 - 8.5 Replication Model WP8117
- 9 Annexes118
 - 9.1 Annex 1: Questionnaires118
- 10 Bibliography125
 - 10.1 References.....125
 - 10.2 Publications.....127



Table of Tables:

Table 1: Abbreviations and Acronyms 8
Table 2: Contribution of partners11
Table 3: Relation to other activities in the project12
Table 4: Events, number of assistants and event type.....94



Table of Figures:

Figure 1: IAP2’s Public Participation Spectrum18

Figure 2: The Community Engagement Triangle20

Figure 3: The field of possible collaborative arrangements concerning climate change mitigation22

Figure 4: Classification of eco-innovation based on technology and market/user practices (Source: Kemp 2011).31

Figure 5: Spectrum of attitudes towards technology (Source: Kerschner & Ehlers 2016).....32

Figure 6: Five stages of the adoption process (Source: Wikipedia).33

Figure 7: The diffusion of innovations (Source: Wikipedia).....34

Figure 8: Priority Areas46

Figure 9: The diffusion of innovations (Source: Wikipedia).....48

Figure 10: Viral Loops Making Self Marketing Apps49

Figure 11: Value Proposal Definition process.....54

Figure 12: Vitoria-Gasteiz Municipality 2016 demographic structure.....86

Figure 13: District of Coronación and when the buildings were made.....87



Abbreviations and Acronym

Abbreviation/Acronym	Description
SmartEnCity	Towards Smart Zero CO ₂ Cities across Europe
CES	Citizen Engagement Strategy
CIDCO	City And Industrial Development Corporation Of Maharashtra Limited
LH	Lighthouse
DK	Denmark
VP	Value Proposition
ICT	Information and Communication Technologies
WP	Work Package
TREA	Tartu Regional Energy Agency
EC	European Commission
CO ₂	Carbon Dioxide
CSC	Coronación Steering Committee
CCPC	Communication and Citizen Engagement Committee
DHW	Domestic Hot Water
RES	Renewable Energy Sources
FAQ	Frequently Asked Questions

Table 1: Abbreviations and Acronyms

0 Publishable Summary

0.1 Citizen Engagement Strategies

Starting from the assumption that initial conditions of each Lighthouse City play an important role in the achievement of SmartEnCity project goals, a qualitative research has been developed. The aim of the research has been to create a descriptive tool to Map the citizen engagement reality of each LH City in a homogeneous way. Homogeneous in the sense of respecting the context, initial conditions and idiosyncrasy of each LH City.

The result is the segmentation of the citizen engagement reality in nine differentiated areas: Governance, Purpose, Key Actors and Roles, Citizen Engagement Strategies definition, Value Proposition, Segments and Target Groups, Communication, Spaces and Feedback. The Map has been named CES Model, the Citizen Engagement Strategy Model. The purpose of this model is to create a frame that can be useful for Cities that are developing citizen engagement strategies that involve the offer of innovative services and products. At the same time, this citizen engagement processes are willing to create the conditions that enable the change of citizens mind-sets' and behaviour (CO₂ emission reduction in this case).

The three LH City partners have been contributing on the application of the CES Model and the process has ended up with a division of the Key Areas in smaller areas. The evaluation consists on a Map that identifies the presence of each LH City in each Area. This exercise has been developed during the first year of the SmartEnCity project, year 2016, which has been mostly centred in the District Renovation and Refurbishing Area value proposal. The works ends up with recommendations for Follower Cities. Future steps related to citizen engagement aspects along the project are suggested in the section 8 Contributions for other WPs.

0.2 Social Innovation Model

Change towards sustainable behaviour is a crucial component in the SmartEnCity project to fulfill its wider goals. Therefore it is important to understand attitudes towards environment and technology to better design activities that would help to achieve these goals. The concept of social innovation is implemented to invoke changes in behaviour and thereby improve the quality of life.



1 Introduction

1.1 Purpose and target group

1.1.1 Citizen Engagement Strategies

The purpose of this model is to create a frame that can be useful for Cities that are developing citizen engagement strategies that involve the offer of innovative services and products. At the same time, this citizen engagement processes are willing to create the conditions that enable the change of citizen's mind-sets' and behaviour (Co2 emission reduction in this case). The target groups that this delivered is addressed to are: governance teams (public and private stakeholders), associations, lead users, citizens.

1.1.2 Social Innovation Model

The purpose of our activities is to raise knowledge in two target groups: 1) local project members, the team that daily work on achieving project aims, engage citizens and contribute to the change – raise knowledge about pilot area residents and understanding about prevalent processes which help planned activities to be more effective, 2) people living daily in the pilot area and citizens in general – raise knowledge about sustainable behaviour and increase the uptake of planned activities.



1.2 Contributions of partners

Participant short name	Contributions
VIS	Chapter 5 and 6. Developing LH Vitoria Cases
ZERO	Chapter 5 and 6 Developing LH Sonderborg Cases
SCL	Chapter 5 and 6 Developing LH Tartu Case
UTAR	Chapter 4 section 4.2 Social Innovation Model.
MON/LKS	Chapter 4 section Framing in the Conceptualisation
IBS	Coordination Tartu Case
TEC	Deliverable review and feedback results
MON	Deliverable review

Table 2: Contribution of partners

1.3 Relation to other activities in the project

Deliverable Number	Contributions
D1.1	Quality Assurance and Risk Management Plan
D2.4	City needs and baseline definition process and methods: suggestions related aspects related to citizen and stakeholder engagement.
D2.5	Integrated Management models for large scale Smart City transformation projects
D3.1	Vitoria-Gasteiz Diagnosis and Baseline: suggestions related aspects related to citizen and stakeholder engagement.
D4.1	Tartu Diagnosis and Baseline
D5.1	Sonderborg Diagnosis and Baseline
D7.3	Evaluation Protocols: most precisely reviewing social acceptance assessment, citizen engagement assessment and economic assessment protocols.

Table 3: Relation to other activities in the project

2 Objectives and expected Impact

2.1 Objective

2.1.1 Citizen Engagement Strategies

The aim of the research has been to create a descriptive tool to Map the citizen engagement reality of each LH City in a homogeneous way. Homogeneous in the sense of respecting the context, initial conditions and idiosyncrasy of each LH City.

2.1.2 Social Innovation Model

Objectives are to understand people living in the pilot area and thereby contribute to achieving the project aims more efficiently. This contributes to more effective use of resources, decrease in energy use, decrease in CO₂ emissions, increase of more inclusive and smarter communities, raising knowledge in the society. More specific objectives include publishing and sharing scientific knowledge (for inside use, follower cities and wider public) and help in the planning of engagement strategy and specific activities.

2.2 Expected Impact

2.2.1 Citizen Engagement Strategies

Outcome of this Deliverable (CES Model) to become an easy to use toolkit people can use to frame such a complex exercise of offering innovative product services to citizens under a public private stakeholder umbrella.

2.2.2 Social Innovation Model

The expected impact of this part is that we have better understanding of the people living in the pilot area of Tartu – what are their attitudes towards environment, technology and the project – that can help in designing activities to approach them. Besides that an initial framework of experiments and social innovation are provided that should help to achieve a change in the people's mindset about their resource use and towards more environmentally sustainable choices.



3 Overall Approach



Conceptualisation: is the first stage in which a diagnosis is made and we start discovering what is the Citizen Subject of Citizen Engagement about. This is where you start to discover what you really don't know about the subject. For the analysis of the subject we used written publications and participatory observation in meetings (stakeholder management meetings in Vitoria-Gasteiz, webconferences with Tartu and Sonderborg Lighthouse Cities, visit to other Lighthouse Cities and Communication teams meetings).

In the Social Innovation Model case, starts understanding attitudes towards environment and technology to better design activities. Extensive work with literature to identify state of art operating social innovation and business models and studies concerning consumer behavior have been done.

Chronology: this phase took place in between February 2016 and July 2016.

This phase corresponds to the subtask 2.1.1 Visual Questionnaire Based in the Diagnosis of the three participating cities.



Prototyping: we identify what we don't know and we start to re-focus the subject with more precision. We analyse how other Working Package teams deliver their first conclusions connected to the subject of Citizen Engagement. We start to identify some patterns that can help us "Mapping the Reality of Citizen Engagement in the Smartencity Project". We re-study and find new publications, testing the conclusions in several meetings, Stakeholder management meetings in Vitoria-Gasteiz, visit to Tartu Lighthouse project, take part in Vitoria-Gasteiz Communication team meetings and test results with task members and other colleagues. We send the questionnaire to the 3 Lighthouse Cities and evaluate the results:

Chronology: this phase takes place in between August 2016 and November 2016.

This phase corresponds to the subtasks 2.1.1 Visual Questionnaire Based in the Diagnosis of the three participating cities and 2.1.2 Evaluation and Conclusions of the three cities.



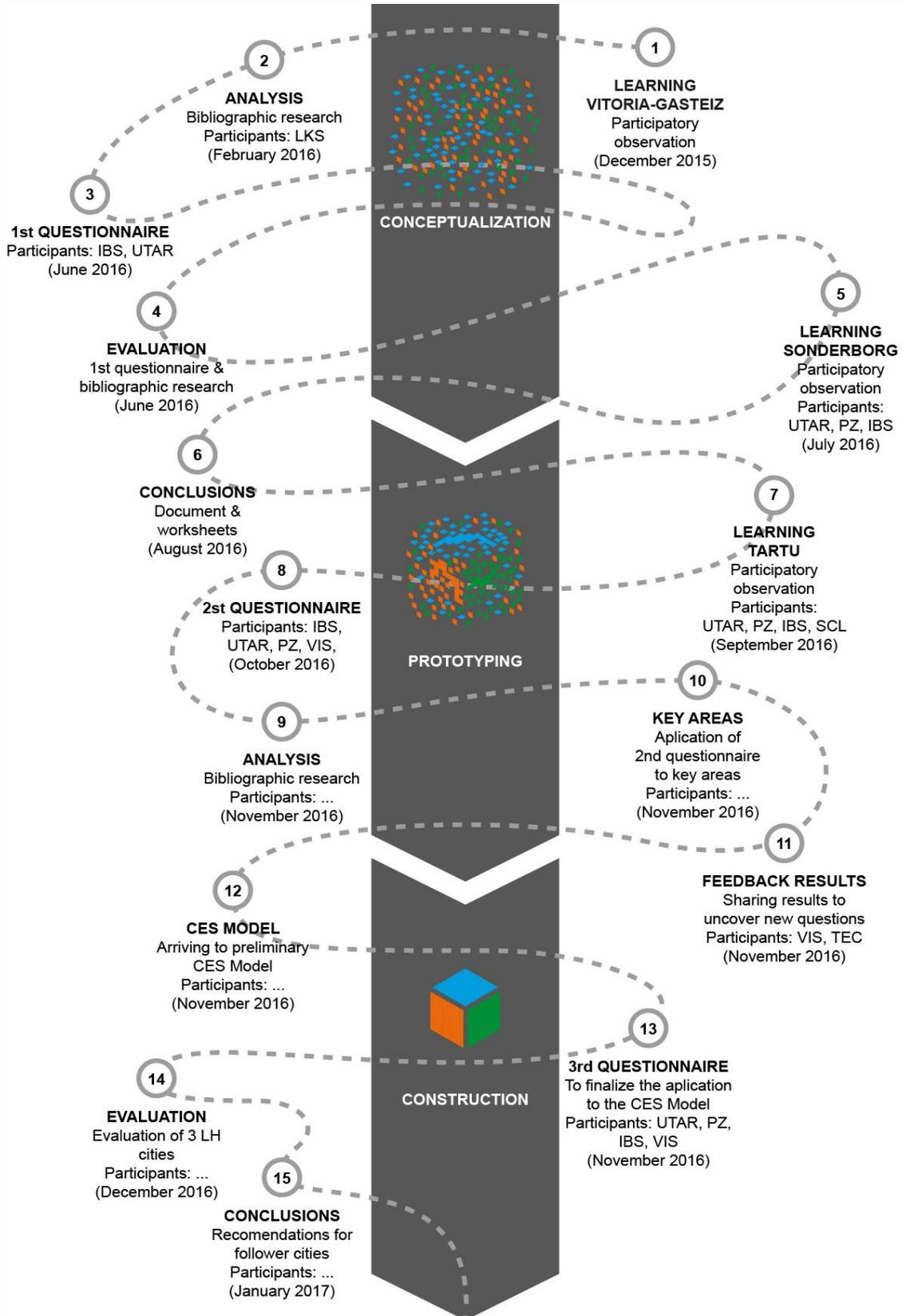
Construction: Citizen Engagement starts to be contextualized, as subject under a Smartencity project Scheme. We have the specifications of the Key Areas, which helps to create a Model that helps us to use a common frame to describe the different realities.

Chronology: this phase takes place in between November 2016 and January 2017.

This phase corresponds to the subtasks 2.1.3 Design and intervention Map for the three cities and 2.1.4: Multi city intervention Map



Enclose the a diagram representing the different activites that took place during the Conceptualization, Prototyping and Construction working process including the specification of the partners that took part in the work development of Citizen Engagement Strategy definition.



4 Phase I – Conceptualization



4.1 Citizen Engagement Strategies

4.1.1 State of Art

The following points are a selection of aspects that have been considered relevant in the citizen engagement strategies analysis phase.

a) Smart Cities and Communities Strategic Implementation Plan

Smart Cities and Communities Strategic Implementation Plan stands up for understanding citizen's motivations, cities and their partners defining effective strategies and tools to equip citizens to be actors in smart city systems: ensure that they are informed and motivated to act responsibly, proactive and participative, or even co-create. If smartly mobilized, the effect of citizen's behaviour, choices, creativity and entrepreneurship could be enormous, offering huge untapped potential.²

From the previous definition key concepts are linked to the engagement process can be extracted:

- Information
- Participation
- Co-creation

² European Innovation Partnership on Smart Cities and Communities - Strategic Implementation Plan

b) Citizen Engagement Strategies as processes

As pointed out in the **D.2.4 City needs and baseline definition process and methods**, IAP2 Spectrum of Public Participation differentiates five levels of public participation, which imply different goals and promises to the public (IAP2, 2014).³

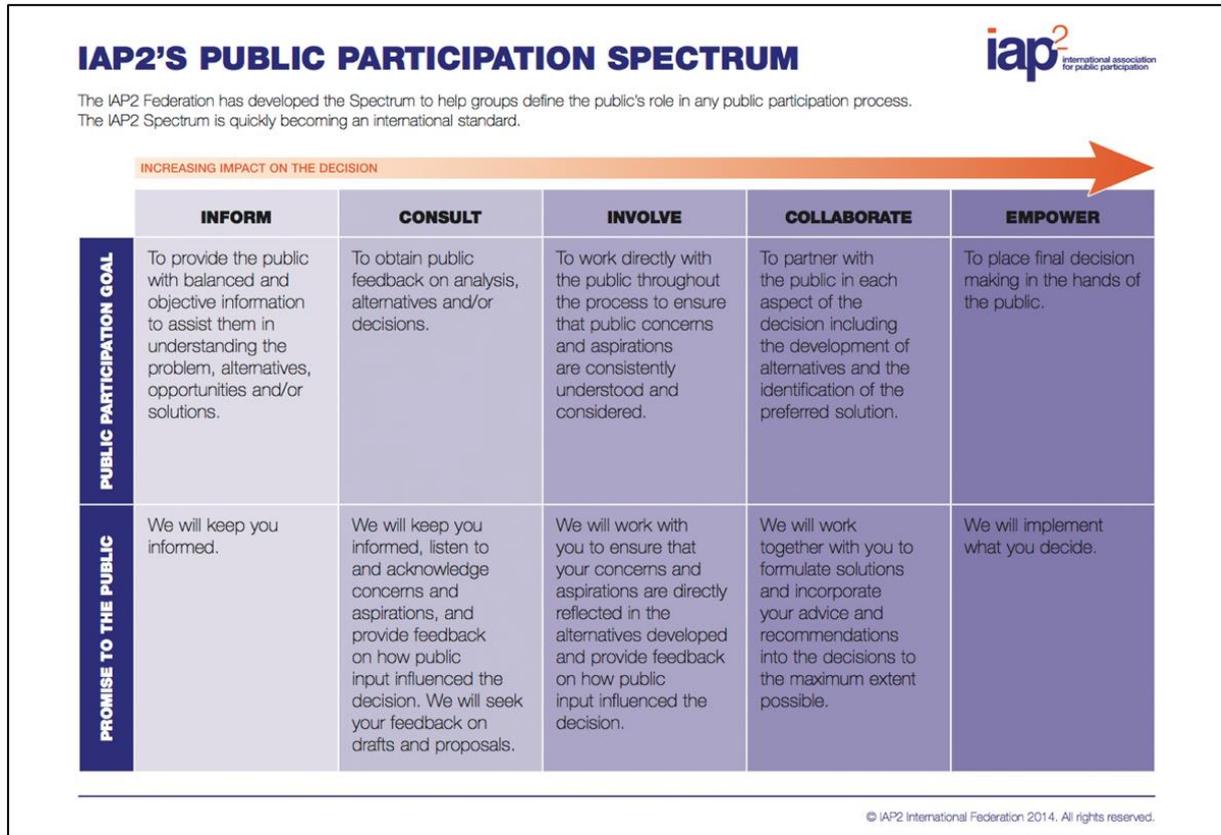


Figure 1: IAP2's Public Participation Spectrum

IAP2 is the International Association for Public Participation – is the most preeminent international organization advancing the practice of public participation. ‘Public participation’ means to involve those who are affected by a decision in the decision-making process. It promotes sustainable decisions by providing participants with the information they need to be involved in a meaningful way, and it communicates participants how their input affects the decision.⁴

There are varying needs for citizen comments or involvement depending on the particular type of situation. At times, local governments will simply want to get information to citizens about a new service or program, an upcoming event, important issues, or a temporary service disruption. At other times, communities may want to gather information or opinions from citizens, or even recruit citizens to study issues in depth and provide advice. At other times, it will be desirable to work directly with the public and even partner with citizens to develop alternatives, creative ideas, and solutions to community-wide concerns.⁵

³

http://c.ymcdn.com/sites/www.iap2.org/resource/resmgr/Foundations_Course/IAP2_P2_Spectrum.pdf?hhSearchTerms=%22spectrum%22

⁴ <http://www.iap2.org>

⁵ <http://mrsc.org/Home/Explore-Topics/Governance/Citizen-Participation-and-Engagement/Communication-and-Citizen-Participation-Techniques.aspx>

In both mentioned cases the citizen participation spectrum increases depending on the situation. Anyhow, citizen engagement processes that included a service product proposal for the citizens were not found. This conducted the CEE working team to create an hybrid model with public and private (product service offer) citizen engaging aspects. This will be presented at the end of this area definition.

From another side, regardless of the model type, weather it is public, private or a hybrid one, when the main goal implies behavioural changes for the climate change mitigation this implies increasing the spectrum of the citizen interaction in the citizen engagement process. The question is how the engagement spectrum can be increased? With which resources?

c) Strategies depending the perspective: land-use planner, community developers, marketing teams

Community engagement means different things to different people in different parts of an organisation. For the land-use planners, the primary question is if the community had an opportunity to provide input into the plan. For the community development work, there are two parallel questions: are we providing the services the community needs? and is the community well connected and involved in public life? For the communications and marketing teams, the central question is how does the community feel *about us*? And finally, for the extension teams, their concern is “*has the community changed its behaviour?*”

In summary, the community engagement is about (1) decision making, (2) relationship development, or (3) capacity building.

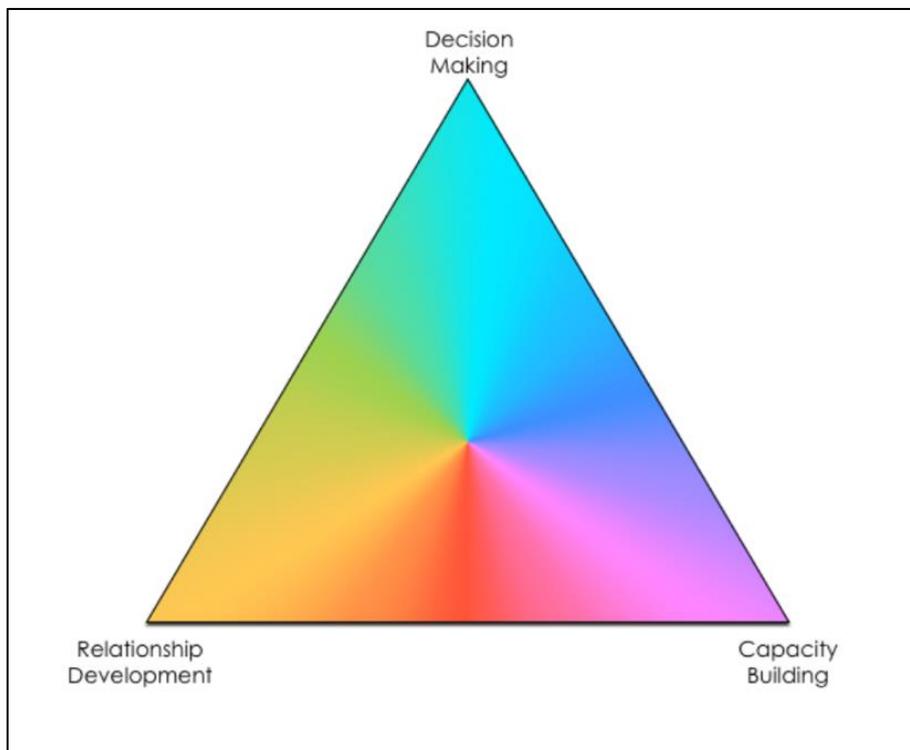


Figure 2: The Community Engagement Triangle⁶

These objectives change depending on the team who is governing the strategy. They clearly aren't mutually exclusive. But some projects lean more heavily toward one outcome which means that some engagement processes are all about decision-making. Others might be 50-50 relationship development and capacity building. Another might sit squarely in the middle of all three. As we wandered along, we started to conceptualise the three objectives as the three corners of a triangle: (1) decision making, (2) relationship development, and (3) capacity building.

⁶ <http://www.bangthetable.com/what-is-community-engagement/#2>

d) Designing Strategies

Introducing the user/citizen from the beginning of the project adds complexity to its planning. The planning will have to be adapted depending on how the concept, product service (value proposal) offer is adapted to the strategy or the strategy is adapted to the value proposal development. The strategic intent ⁷ is a middle stage in between grand visions and specific plans. Tactics is knowing what to do when there is something to do, strategy is knowing what to do when there is nothing to do (Savielly Tartakower, chess Grandmaster).

Investing the time to articulate the ecosystem of the problem and create a balanced portfolio of prioritized areas of action accelerates later choices. It provides principles to guide decision-making on a more discrete level.

As mentioned “*in studio: recipes for systemic change book*” ⁸, developing a vision alone or individually is hard to act on. The difficulty is on winning consensus, which means that conversations often remain at a fairly abstract level. Nevertheless, when consensus does come, action follows and therein lies the dangers of having strong vision but fuzzy intent. So this means generating a space to answer this questions:

- Vision (why should we act?)
- Intent (what should be done?)
- Plan (how will be do it and who should be involved?)
- Feedback loops that guide the why, what, how and who

In Stakeholder alignment processes, the key of the Strategic Designer is not a question about thinking or doing, but what to think and about and what to do.

⁷ <https://hbr.org/2005/07/strategic-intent>

⁸ http://www.helsinki.designlab.org/peoplepods/themes/hdl/downloads/In_Studio-Recipes_for_Systemic_Change.pdf



e) Citizen Engagement Strategies and Climate Change

A relevant publication related with citizen engagement and climate change mitigation has been identified. This work makes a compilation and analysis of different citizen driven initiatives in Denmark. From this work's perspective, there are different possible collaborative arrangements and co-creation processes in which citizens and public authorities collaborate. They suggest four different collaboration fields⁹ in between citizens and public authorities.

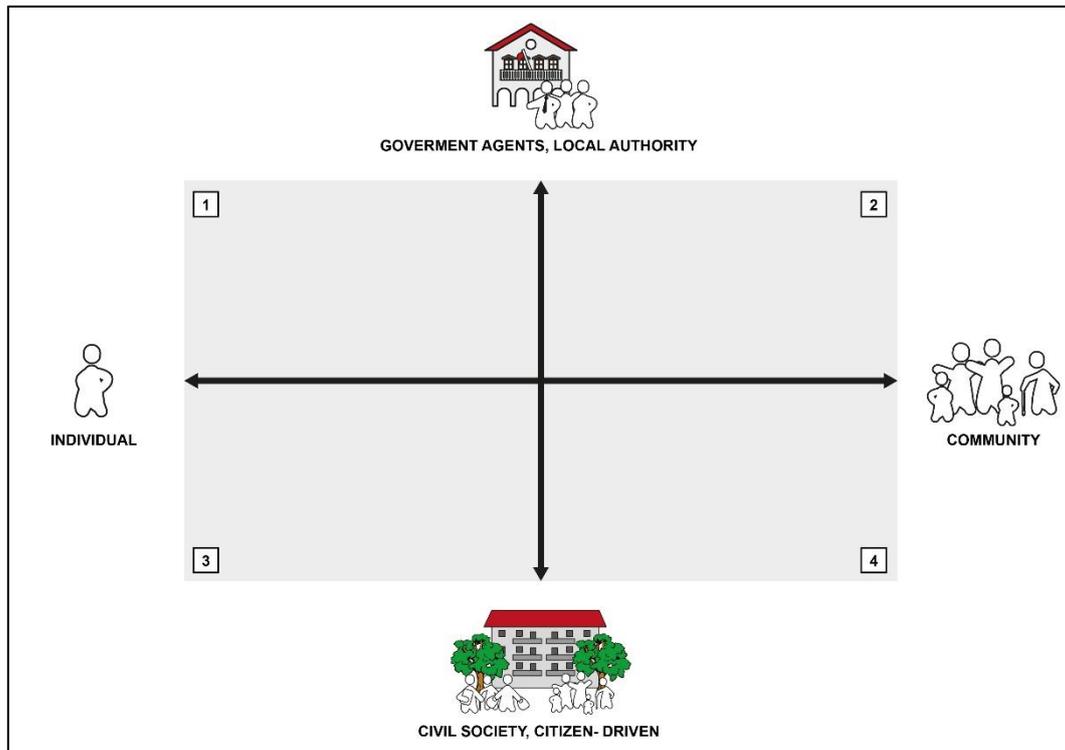


Figure 3: The field of possible collaborative arrangements concerning climate change mitigation

About the fields of collaboration, the **Square 1** of the figure denotes arrangements that are initiated by a public agency and are **focused primarily on influencing individual behaviour**. These arrangements rely most often on policies influenced by rational choice theory. This theory posits that individuals will always choose the most rational options that maximise their advantages. Information campaigns, taxes or subsidies are therefore the most common social technologies found among these arrangements.

Square 2 denotes arrangements initiated by a public agency that focus on different types of communities where the changes promoted require a support of a collectivity. As example, wind turbines, national parks and power plants that impact landscapes or a neighbourhood.

Square 3 denotes action initiated specifically by citizens themselves as individual actors that work on environmental choices in the everyday live.

⁹ Hoff J, Gausset Q (2016) Community governance and citizen-driven initiatives in climate change mitigation , Routledge Advances in Climate Change Research

Square 4 denotes arrangements projects where citizens or groups are aimed to improving their community or association. Food cooperatives, sustainable food clubs or carbon neutral building blocks are examples of these initiatives.

The two axes that illustrate bottom-up and top-down agency and individual and collective targets should be seen as ideal types and in practice they present as a *continuum*. In the case of Smartencity project, the working field oscillates between Square 1 and 2.

Following on important findings of this work, it defends that there are many different ways of understanding how behaviour can be changed: some rational choice theory posits that individuals will always choose the most rational options. Maximising citizens advantages is quite extended and has influenced and influences many policies. Anyhow an oscillation between the individual and community interaction activities is a better strategy to achieve the *“aim to contribute to create Smart Zero CO₂ Cities across Europe through urban regeneration strategies, integrated urban plans and district integrated interventions”*.

There are different alternatives to develop Citizen Engagement Strategies in the mitigation of climate change. Square 1 corresponds to individuals responding to information campaigns or economic subsidies.

A broader perspective of the citizen engagement phenomena will be helpful to understand an ecosystem of collaborative arrangements that can trigger the new legislation and political standards. Several studies suggest that reaching the sceptics will not be possible unless moral norms and values are changed. Norms are values strongly connected with education.

f) Citizen Direct and Indirect Participation

Citizen engagement strategy developed at CIDCO¹⁰ Smart City Lab (India's Premiere Town Planning Agency and the National Institute of Urban affairs in India) adapts the International Association for Public Participation process of five steps in to three broader categories namely, (i) information: one way communication of city authorities to citizens, (ii) direct participation: engagement in terms of two way communication or collaboration of city authorities with citizens directly, and (iii) indirect participation: engagement in terms of two way communication or collaboration of city authorities with representatives of citizens.

g) Public and Private domains in environmental practices

Informing, consulting and involving people for a district renovation project has its own particular mechanisms as it “touches” the most particular space of a citizen: her or his home, her or his budget and her or his behaviour related to the impact of her or his energy consumption in the mitigation of the climate change.

Noortje Marres points out how¹¹ **projects that define the home as a site where people can do their bit for the climate challenge certain classic assumptions regarding the proper locations and formats for public involvement in politics.** She also mentions that environmental practices start to scramble the neat geometry provided by the classic republican conceptions of citizenship, as in the work of Aristotle and Rousseau.

In the same article describes how the republican tradition firmly anchored civic action on one side of the divides between the public and the private domain, between matters of general concern and mere particularities, and between the lofty questions of the common good to which the leisurely classes dedicate themselves and the mundane troubles and worries that keep working men and women busy.

If is clear that the homes can do a bit for the climate change, it would be also clear that the monitoring of the houses energy consumption implies the installation of smartmeters in people homes. Using these technologies is of question for their possible users, this is the reason why it is so important to get connected with the possible customer base, provide transparent information and engage¹² them before installing the meters¹².

h) Citizen Engagement European Best Practice Collection

A longitudinal study on urban development based on 50 cases¹³ facilitates some recommendations related to citizen empowerment. The cases show that the construction of a participatory process is dependent on socioeconomic conditions and the particular type of governance culture and experience of Member States.

Southern European and new Member States that lack a national framework are more dependent on a local context; here participation arises out of extemporaneous opportunities, intuitive actions and self-organised social innovation, possibly filling gaps left by institutional

¹⁰ <http://cidco-smartcity.niua.org/citizen-engagement-process/>

¹¹ http://research.gold.ac.uk/6229/1/Marres_frontstaging_nonhumans.pdf

¹² Buchanan, K., Banks, N., Preston, I., Russo, R. (2016)

¹³ AEIDL (2013): Urban development in the EU: 50 projects supported by the European Regional Development Fund during the 2007-13 period. European Commission, Directorate General for Regional and Urban Policy http://ec.europa.eu/regional_policy/sources/docgener/studies/pdf/50_projects/urban_dev_erdf50.pdf



governance or profiting from particular contextual conditions. This attitude has the positive effect of enhancing dynamic initiatives and innovative models. It is characterised by adaptive capacity and civic engagement, and designs interesting exceptions to the mainstream models, but often lacks continuity.

In Northern Europe, in particular, it appears that ‘institutionally integrated processes’ dominate, with a top-down approach to bottom-up practices. Here long-term planning frameworks are characterised by complexity, vertical articulation, and a higher level of effectiveness in public administration, but also some rigidity of rationale and obstructive bureaucracy. The issues may stem in some part from the repetition of long-term practices, and an incapacity to renew methodology in a framework that remains the same.

New Eastern Member States, inspired by EU guidelines and principles, seem instead to apply public participation as a form of ‘institutional adaptation’ in order to comply with EU rules. They are pushed to speed up the renewal of the post-communist institutional and sectorial apparatus in order to benefit from EU support, although in some cases they show a limited and paternalistic understanding of public participation which can be still encountered as well in many EU-15 Member States.

Other conclusions that are independent of the countries cultures are related with Governance: the case studies show that authorities have been involving a variety of actors, using techniques and tools to improve the efficacy of participatory planning. It is widely acknowledged that participatory processes are at risk of being hyped up, being seldom linear and not always congruent with the situation on the ground. In particular, when rhetoric dominates reality there is little or no transformation on the status quo, and little capacity to challenge existing power structures and so generate policy and institutional learning. Good practices are those that succeed in sowing the seed of change and in engaging public authorities in reflection on the effectiveness of public participation in local micro projects as well as in governance more broadly.

Following on Governance the **D.4.2 City needs and baseline definition process and methods** recommendation is that the Citizen Engagement approach should take into account the city existing factors as governance culture, administrative structures and decision making frameworks. These aspects are crucial to avoid making promises to the Citizens that cannot be fulfilled. Following these statements, it is also argued that the city engagement strategy should be co-defined from the very beginning of the process and in direct connection of the Communication Strategy of the whole project.

The perspective of of giving each *Smartencity* Lighthouse project a space to develop a strategy depending on its own context and needs is also reinforced. Adding to the mentioned governance culture, administrative structures and decision making frameworks, CO₂ emissions reduction existing politics and social practices could be included¹⁴.

¹⁴ In relation with building retrofitting and energy efficiency practices in the homes



i) Citizen Engagement when there is a Product Service Behind

The targeted citizen groups are supposed to make an economic transaction in exchange of the acquisition of products and services that will be offered by the project stakeholders. As mentioned before **no citizen engagement process or model including a service product proposal for the citizens was found.**

Anyhow the information, consultation and involving process as defined in the presented models suits very well to introduce the project to the targeted communities. Anyhow there is a moment in which the value proposal itself plays an active role as product or service. This does not mean the automatic reduction of the citizen participation. In this phase also the co-definition takes part, but under other conditions. In anycase, the sales process will differ depending on each LH project circumstances.

As co-defining example, some components of the refurbish product can be contrasted with informal lead users. They can participate adapting the value proposal before presenting it to the rest of the target group. The involved lead users could be helpful actors for the dissemination of the features of the components in a understandable way.

4.1.2 Participatory observation

a) Definition

The following description is based on the scientific article of *Barbara B. Kawulich, Participant Observation as a Data Collection Method*¹⁵. The work offers different definitions about participatory observation including also a typology of them.

Marshall and Rossman¹⁶ define observation as "**the systematic description of events, behaviors, and artifacts in the social setting chosen for study**" (p. 79). Observations enable the researcher to describe existing situations using the five senses, providing a "written photograph" of the situation under study. Demunck and Sobo¹⁷ describe participant observation as the primary method used by anthropologists doing fieldwork. Fieldwork involves "active looking, improving memory, informal interviewing, writing detailed field notes, and perhaps most importantly, patience"¹⁸. Participant observation is the process enabling researchers to learn about the activities of the people under study in the natural setting through observing and participating in those activities. It provides the context for development of sampling guidelines and interview guides¹⁹.

b) Typologies

Werner and Schoepfle²⁰ focus on the process of conducting observations and describe three types of processes:

1. The first is **descriptive observation**, in which one observes anything and everything, assuming that he/she knows nothing; the disadvantage of this type is that it can lead to the collection of minutiae that may or may not be relevant to the study.
2. The second type, **focused observation**, emphasizes observation supported by interviews, in which the participants' insights guide the researcher's decisions about what to observe.
3. The third type of observation is **selective observation**, in which the researcher focuses on different types of activities to help delineate the differences in those activities²¹.

¹⁵ Kawulich, Barbara B.. Participant Observation as a Data Collection Method. **Forum Qualitative Sozialforschung / Forum: Qualitative Social Research**, [S.l.], v. 6, n. 2, may 2005. ISSN 1438-5627. Available at: <<http://www.qualitative-research.net/index.php/fqs/article/view/466/996>>. Date accessed: 12 jan. 2017.

¹⁶ Marshall, Catherine & Rossman, Gretchen B. (1989). *Designing qualitative research*. Newbury Park, CA: Sage.

¹⁷ DeMunck, Victor C. & Sobo, Elisa J. (Eds) (1998). *Using methods in the field: a practical introduction and casebook*. Walnut Creek, CA: AltaMira Press.

¹⁸ DeWalt, Kathleen M. & DeWalt, Billie R. (1998). Participant observation. In H. Russell Bernard (Ed.), *Handbook of methods in cultural anthropology* (pp.259-300). Walnut Creek: AltaMira Press

¹⁹ DeWalt, Kathleen M. & DeWalt, Billie R. (2002). *Participant observation: a guide for fieldworkers*. Walnut Creek, CA: AltaMira Press.

²⁰ Werner Oswald & Schoepfle, G. Mark (1987). *Systematic fieldwork: Vol. 1. Foundations of ethnography and interviewing*. Newbury Park, CA: Sage Publications.

²¹ Angrosino, Michael V. & Mays dePerez, Kimberly A. (2000). Rethinking observation: From method to context. In Norman K. Denzin & Yvonna S. Lincoln (Eds.), *Handbook of Qualitative Research* (second edition, pp.673-702), Thousand Oaks, CA: Sage.



c) Application of the participatory observation

In the first phase, a descriptive observation was applied where the analysis from the participants' insights were the guide to take the decisions on what to observe. After 5 months of work in the project the observation started to be more focused. In both cases, the previously compiled and analysed information conclusions were again contrasted with the reality through different open questionnaires. The observation turned more selective after 9 months.

These questionnaires will be named in this deliverable as questionnaires one, two and three.

The exercise of participatory observation was done during stakeholder management meetings in Vitoria-Gasteiz (year 2016) and workshops with Sonderborg (June 2016) and Tartu (September 2016) Lighthouse Cities.

4.1.2 First Questionnaire

After three months of participatory observation in Vitoria-Gasteiz LH Steering Committee Meetings, and after some personal interviews with different project stakeholders, a first questionnaire is made (see Annex 1) and then sent to Tartu City and Vitoria-Gasteiz. The reason of not including Sonderborg in this first phase is because the initial conditions of Vitoria-Gasteiz and Tartu are more similar. Sonderborg is incorporated in the second and third questionnaire.

The main goal in this phase was to start contrasting the conclusions obtained in the first participatory observation analysis. It is also an exercise to test what and how Tartu LH and Vitoria-Gasteiz LH Smartencity citizen engagement working groups are planning and doing to start connecting with the different target group of citizens.

The first conclusions from the questionnaire are that Vitoria-Gasteiz LH is more oriented on designing the strategy step by step, together with the consensus of different actors, specially Visesa, Vitoria-Gasteiz Municipality and ACEDE & H-Enea Living Lab. The Strategy becomes an exercise of including different Citizen Engagement Perspectives: *Marketing and Community Development* (see point 4.1.1 State of Art). Which as result, integrates an on and off-line strategy. The step by step strategy allows flexibility on adapting the decisions to the needs of the citizens. This flexibility is also linked with the lack of having unique administrative companies, House Associations, as in the case of Tartu. That is why the first step of the general strategy of Vitoria-Gasteiz centres on starting with general information and Reurbanisation planning aspects of the project. Besides this, Vitoria-Gasteiz has another challenge which is the first renewable energy District Heating installation in the neighbourhood.

Tartu LH Strategy is much more structured and the plan is aligned between Tartu City, Baltic Innovation Agency, Regional Energy Agency, Smart City Lab and Tartu University. The existence of a House Association makes the strategy easier. The interlocutors are clear and the target groups too. In Vitoria-Gasteiz they stress on Marketing and Community Development. In Tartu they stress more the Marketing and Capacity Building side aspects of the engagement in the sense that Citizens and developers will learn how to use and create the new smart home tools and reduce their consumption (see point 4.1.1 State of Art).

4.1.3 Conclusions

Citizen Engagement when there is a service product offer behind

- Citizen engagement processes that include a service product proposal for the citizens were not found. This conducted the CEE working team to create a new hybrid model with public and private (product service offer) citizen engaging aspects.
- The engagement process is a mixture of a public private partnership with an offer of service products in the end.
- Project planning should also depend on how the strategy is adapted to the concept product development and communication plan.

Citizen Engagement project team members profiles

Urban planning, marketing and community service perspectives are necessary. For some purposes one perspective is more relevant than the others, these aspects should be identified internally in each LH City citizen engagement working groups. Citizen engagement goals change depending the orientation of the team that is leading the process: urban planning, marketing, community service. All the perspectives should be aligned for the general strategy. Citizen engagement is a new topic for the stakeholders and the more familiarized ones are marketing oriented project members.

Innovation Mindset

Many project aspects are innovative, questions should be opened around our assumptions rather than giving things for granted. The culture of the organisations are mainly oriented to action rather than thinking about the conditions that can bring the citizen engagement to success.

Key Concepts

Some issues have been identified as key concepts:

- Target Groups (To Whom are we delivering the activities?)
- Key Actors (With Whom are we reaching the Target Groups?)
- Governance (Who are the decisions makers for the Strategys and implementations?)
- Value Proposition (What are we communicating and offering?)



4.2 Social innovation

4.2.1 Definitions and concepts for the SmartEnCity context

In the SmartEnCity project the aim is to decrease the CO₂ emissions through the reduction of need for resources (electricity, heat, water, etc.) in the project/pilot area. Thus the proposed approach to achieve this is twofold: 1) use new and innovative technology to allow the change in consumption and behaviour patterns, 2) stimulate behaviour change through different citizen engagement and empowerment methods. We try to provoke people to think about environmental issues and their behaviour, and technology as a medium should help us with it. Thus the focus is on behaviour change, and smart technology and social innovation are the means for the pilot area community to achieve this and increase their impact.

a) Perspectives on innovation

Oslo Manual (Oslo Manual 2005, p. 47) has defined **innovation** as “the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations”. There are four main types of innovations defined: product innovation, process innovation, marketing innovation and organisational innovation (Oslo Manual 2005).

In the context of smart cities and citizen engagement, innovation can be utilised for improving the living requirements, reducing negative side effects of consumption behaviour, and strengthen the community – these include eco-innovation and social innovation.

Eco-innovation has been defined as “the creation of novel and competitively priced goods, processes, systems, services, and procedures designed to satisfy human needs and provide a better quality of life for everyone with a life-cycle minimal use of natural resources (materials including energy and surface area) per unit output, and a minimal release of toxic substances” (Reid & Miedzinski 2008, p. 2). The aim of eco-innovation is to change consumption and production patterns and provide new technologies, products and services that allow the reduction of society’s impact on the environment. But besides sustainable solutions that allow more efficient use of resources and reduce the negative side-effects, emphasis is laid on economic growth and competitive advantage that these innovations allow to arise²².

Pol & Ville (2009) have analysed the concept of **social innovation** and compared it with different innovations (technology innovation, business innovation, etc.) and analysed its fuzzy boundaries (f. e., with business innovation). In conclusion, the basic values that social innovation holds are increasing the quality or quantity of life or both and to help create better futures (Pol & Ville 2009).

“Innovation” in the concept “social innovation” indicates the ability to create and implement new value creating ideas; and “social” indicates the essence or nature of the value the innovation should provide: the value should be less associated with profit and more with themes like life quality, solidarity and well-being. Social innovation creates new forms of organisations and interactions that tackle different social problems. (bepa 2010)

Social innovation is social by its aims and methods comprising of new ideas (products, services and models), that simultaneously correspond to the needs of society (they are more

²² http://ec.europa.eu/eaci/eco_en.htm



efficient than other alternatives) and create new social relationships and cooperation. In other words, social innovation is not only good for the society by its goals but it also increases the society's capability to act. (Bepa 2010).

To sum up, social innovation can provide solutions to social problems that are more effective, efficient, sustainable and equitable than alternative solutions, and the value created will benefit the whole society not private individuals (Phills Jr. *et al.* 2008). Social innovation has also been described as collective and targeted new social practices that are the drivers for social change (Cajaiba-Santana 2014). The Bureau of European Policy Advisers (bepa, 2010) has provided three complementary approaches to the social dimension of social innovation that describe what this “social” output relates to. These include: 1) the social demand perspective, 2) the societal challenge perspective, and 3) the systemic changes perspective.

Technology provides opportunities to tackle different problems the society faces and supports the emergence of systemic changes in the daily practices of people. Thus we can consider **eco-innovation as social innovation** (Kemp 2011; Figure 4) – social innovation is achieved if there has been changes in existing linkages in user practices, markets and institutions; and if technology is incremental – developing and complementing already existing products, services, processes, organisations and methods.

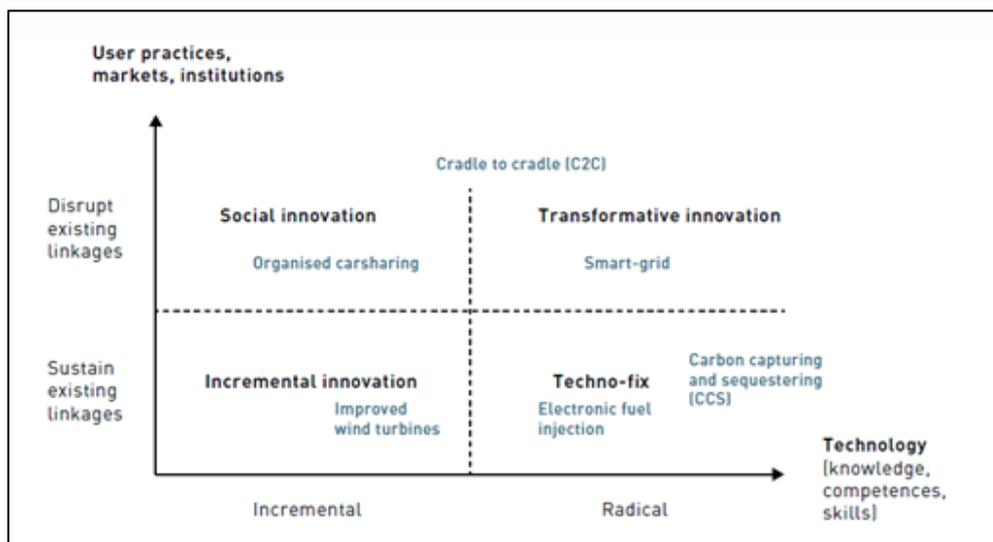


Figure 4: Classification of eco-innovation based on technology and market/user practices (Source: Kemp 2011).

Related to innovation are **new business models**. Business models are necessary for any company to be successful. At the same time value for a customer is created, the business model itself can become a competitive advantage through the **business model innovation**. Companies that aspire towards competitive advantages use unique value proposition and business model innovation (Boons & Lüdeke-Freund 2013). Process and product innovation may no longer be sufficient for a company to achieve financial and sustainable progress (SustainAbility 2014). Previous business models may not work anymore and fulfill their goals in the current context. Therefore it is important to develop new business models that would allow innovative solutions to reach the customers that would guarantee the profit to the business as well to the society (SustainAbility 2014). Some of these business models include physical to virtual, produce on demand, building a marketplace, alternative marketplace, behaviour change, shared resource, cooperative ownership (SustainAbility 2014).



Sustainable business models are oriented towards solving social and environmental problems. Receiving monetary or financial profit is not a primary goal (Dentchev *et al.* 2016). But this approach aimed at creating (social) value without direct financial return needs further studying (Dentchev *et al.* 2016).

To sum up, social innovation changes the market by being more compatible with the concept of sustainable development. Therefore new business models are very important. The challenge social enterprises face is to change the value creation logic and change in the value creation is the main theme of business model innovations (Boons & Lüdeke-Freund 2013).

b) Attitudes towards technology and innovation diffusion

Innovation is highly related to development of technology and technological solutions. Overall attitudes towards technology can have an impact on how susceptible people are towards innovation, i.e. towards new and upgraded technology. The polar spectrum of dividing individuals to technology friendly and technology hostile has received some criticism (Kerschner & Ehlers 2016). Kerschner & Ehlers (2016) have developed a spectrum of attitudes towards technology that should provide a better overview of individuals’ attitudes towards technology. These include enthusiasm, determinism, romanticism and scepticism that in turn are divided into three more detailed subcategories (Figure 5).

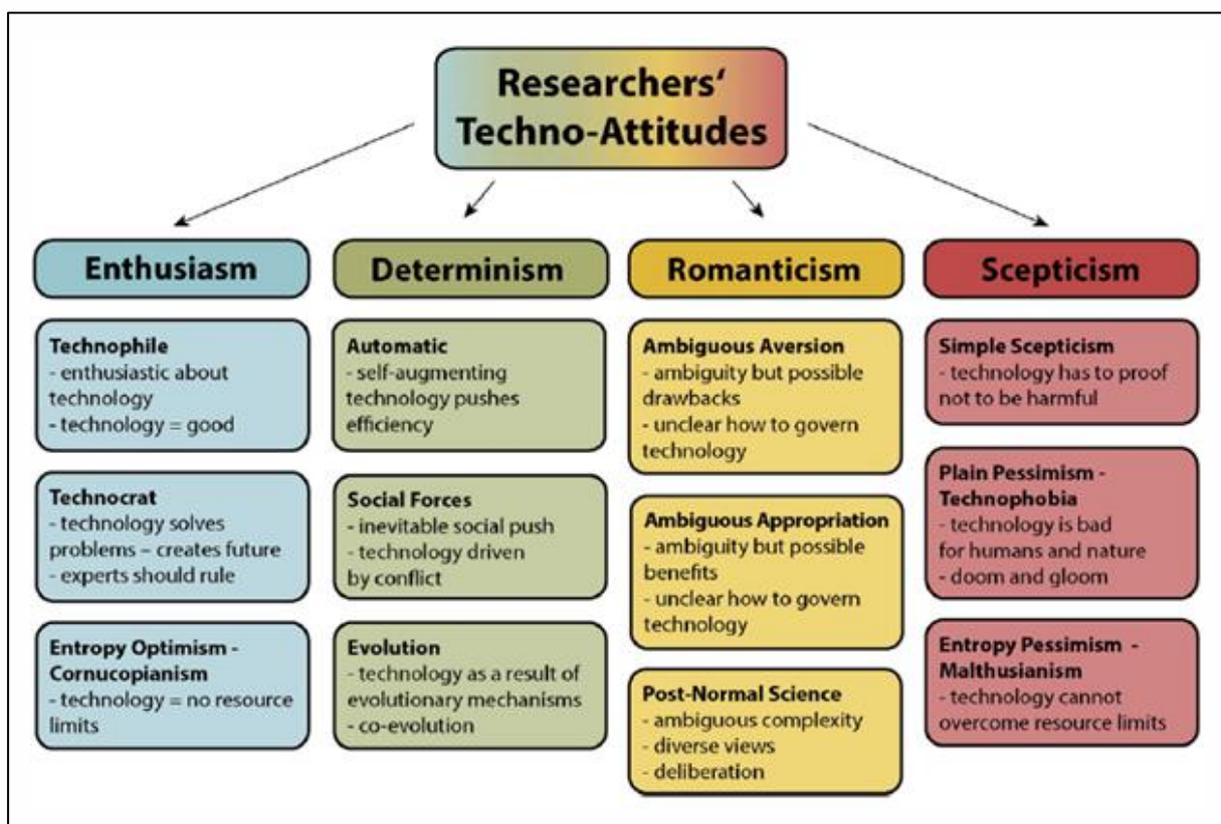


Figure 5: Spectrum of attitudes towards technology (Source: Kerschner & Ehlers 2016)

Innovation has brought us many sustainable technical solutions, such as EV cars, solar panels, smart meters, etc. However, innovative solutions can realize their full potential only if the customers are willing to adopt them (Noppers *et al.* 2015), thereby making the innovation diffusion an extremely important aspect. Diffusion of innovations is a theory about the process of how, why and at what rate new ideas and technologies are spread (Rogers 2003).

Many studies use Roger's theory for explaining people's willingness to adopt new technologies. According to this theory, there has been distinguished five stages for diffusion of innovation (Rogers 2003, Ward 2013, p. 225) (see also Figure 6):

- Knowledge – learning about the existence and function of the innovation,
- Persuasion – becoming convinced of the value of innovation,
- Decision – committing to the adoption of innovation or rejection,
- Implementation – putting it to use,
- Confirmation – the ultimate acceptance (or rejection) of the innovation.

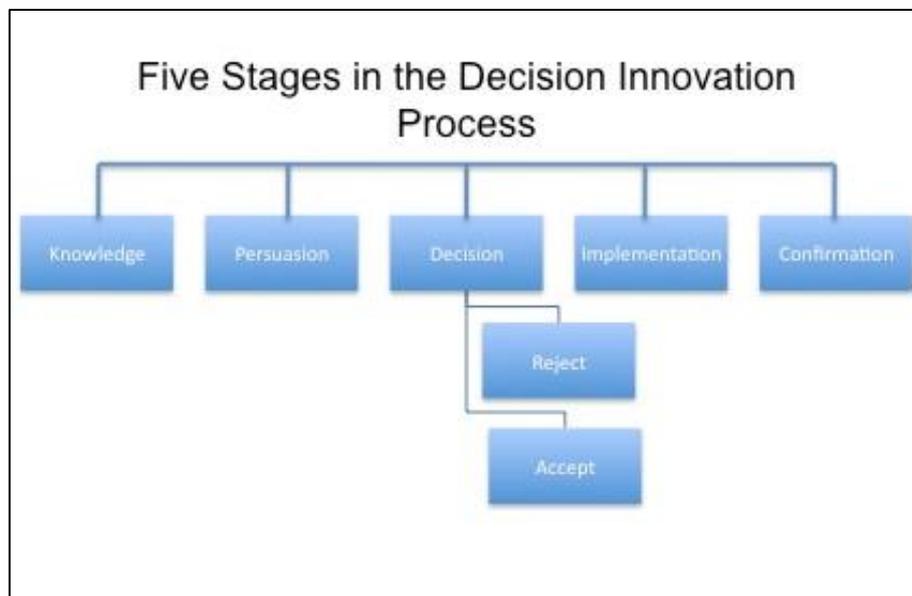


Figure 6: Five stages of the adoption process (Source: Wikipedia²³).

In the technology adoption processes the decisions of whether to adopt an innovative technology can either be made freely and implemented voluntarily by the actual users, or be made by a few authoritative individuals and implemented enforceably (Zhang *et al.* 2016). In the former type of adoption the user makes an accept or reject decision based on one's knowledge, satisfaction and experience. In the latter type users are "forced" to use a technology with very limited prior knowledge or experience about it. An example of "forced" innovation diffusion is the massive system of infrastructure upgrades (e.g. installation of smart meters) guided by authorities. When authoritative adoption happens, it is significantly important to understand how actual users start to learn about the innovative technology, use the technology, and finally make the best use of it and perhaps motivate other users to use it or to improve their knowledge quickly (Zhang *et al.* 2016). The literature about this topic is extremely scarce, with almost no studies conducted in this area (Zhang *et al.* 2016).

²³ https://en.wikipedia.org/wiki/Diffusion_of_innovations

Under diffusion of innovations theory, a given population consists of five categories of adopters differentiated on the basis of characteristics of the innovation itself, communication channels, time and the given social system or context in which the innovation manifests (Chen & Sintov 2016): innovators, early adopters, early majority, late majority and laggards (Figure 7).

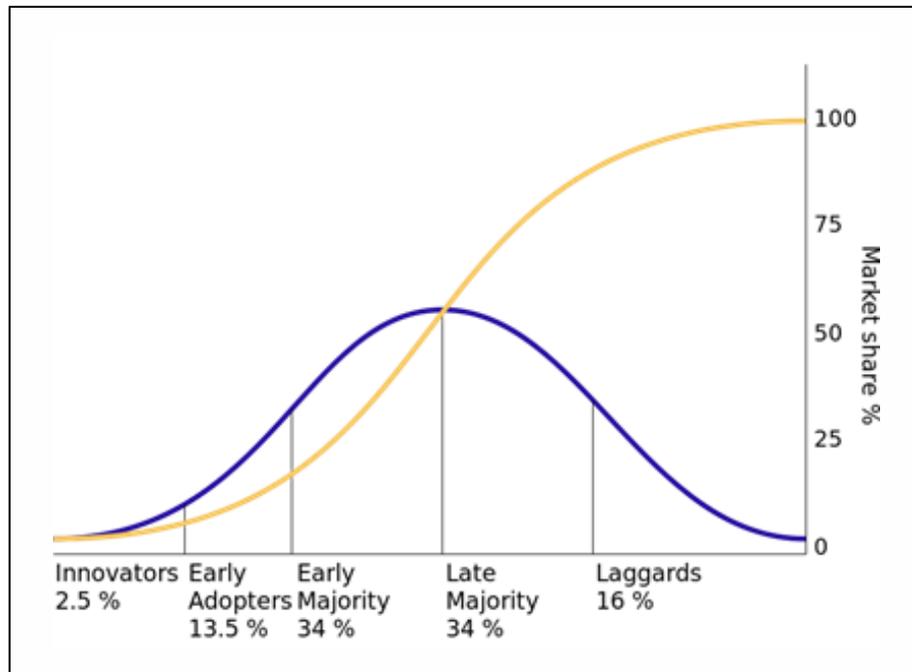


Figure 7: The diffusion of innovations (Source: Wikipedia²⁴)

c) Smart systems and technology

A **smart technology** is a self-operative and corrective system that requires little or no human intervention (Debnath *et al.* 2014). It can have the following capabilities: sensing, processing and decision making, acting (control) and communicating (Debnath *et al.* 2014). Smart technologies and connected products offer bigger convenience and flexibility. People can have real-time information about their behaviour which helps them in decision-making and to see better and more economical alternatives. In addition to person-related behaviour, sensors, intelligent technologies and big data, make a city as a whole more energy-efficient and sustainable. Sensor technologies are being used in different areas such as monitoring infrastructures, buildings, environment, citizen engagement, prevention of crime, etc. Real-time data can help to make cutbacks in inspection and transportation expenses. Also, big data offers possibilities for long-term and accurate forecasts in different areas.

Smart technology can be accounted for as a part of eco-innovation through optimised use of resources. For example, smart meters that allow to measure resource use in real-time.

²⁴ https://en.wikipedia.org/wiki/Diffusion_of_innovations

Using **smart meters** (electronic devices that allow to measure resource use) is one of the most substantial innovations in the energy consumption sector (Darby 2010, *cit.* Buchanan *et al.* 2016). For them to have the maximum effect it is important that people integrate these technological solutions to their daily lives and way of thinking. But like with every technological upgrade fears and unsubstantiated expectations are also present in association with smart meters (Buchanan *et al.* 2016; Krishnamurti *et al.* 2012), that all in all may hinder their practical value and usefulness. There has been studies that have dealt with these issues (f. e., Barnicoat & Danson (2015)) providing with information about the failures of implementation. But, on the contrary, smart meters may also have positive effect on the behaviour (f. e., Bertoldo *et al.* 2015; Hargreaves *et al.* 2010). And then there are studies that are questioning the possible long-term effects of this approach (Hargreaves *et al.* 2013). Since the adoption and acceptance of (see Schmidt *et al.* 2016) using these technologies is of question for their possible users, this is the reason why it is so important to get connected with the possible customer base, provide transparent information and engage them before installing the meters (Buchanan *et al.* 2016).

Besides physical applications (like sensors) themselves it is important that the persuasive side of technology is also coherent with the aims of the application. **Persuasive technology** is seen as one option to create sustainable innovation (Aagaard & Lindgren 2015). The proposed solution must meet specific requirements to create change in the behaviour. For example, Oinas-Kukkonen and Harjumaa (2009) have illustrated based on a web-based environment what should be taken into account in creating persuasive systems.

Associated with behaviour change and technology are **nudge tools**. “Nudge tools include defaults, working with warnings of various kinds, changing layouts and features of different environments, reminding people about their choices, drawing attention to social norms and using framing in order to change behaviour” (Lehner *et al.* 2016, p. 168). According to Lehner *et al.* (2016) nudges comprise of four types of tools that include:

1. simplification and framing of information,
2. changes to physical environment,
3. changes to the default policy,
4. the use of social norms.

d) Sustainable behaviour

On the one hand, to what extent anthropogenic effect has on environment and what role humans play in climate change, the public has received controversial information (Kahan *et al.* 2012, Leiserowitz 2006, *cit.* Price *et al.* 2014). This may confuse the public. On the other hand, people have certain habits. In a situation, where there are presented proofs or references, that are not consistent with current knowledge or habits, people tend to disregard or ignore these kind of proofs (Kahan *et al.* 2012, *cit.* Price *et al.* 2014). Therefore, in order to understand the environmental worldview and attitudes we also need to understand the cultural background (Price *et al.* 2014).

Besides these – habits and cultural context – there is a long list of factors affecting human behaviour (i.e., knowledge, personal attitude, mentality, preferences and beliefs, worldviews, social norms or norms that are dominant in the group, laws and resources (financial, time, etc.), socio-demographic attributes (education)). Many theories are used to describe and understand the individual behaviour and decision making process in the context of environment (for example, see Thøgersen and Ölander (2003), Stern (2000) for theories and concepts). This overview does not claim to give an exhaustive overview of the topic, rather emphasises some aspects that are relevant if discussing the change towards more pro-environmental behaviour. The main questions in this context are what affects the decision making process to act more or less environmentally sustainable and how the decisions can be altered for. Here are brought some aspects that we would like to elaborate on and what are important for our further study: the value-action gap, spill-over and frugality.

How aware are people of contemporary environmental problems? Ham *et al.* (2016) have discussed the definition of “environmental awareness”. They bring out that there is no one definition that would allow to describe it, since because of terminological similarities there is confusion about meanings. For example, environmental awareness is often equalized with notions like environmental responsibility and environmental behaviour, that are directly linked with how the person acts or what choices one makes, for example, as a consumer. Broadly speaking, we can use two concepts to understand the decision making process of a consumer: environmental awareness, that may be defined as attitude toward anthropogenic factors on environment or consequences of human behaviour, and environmental responsibility, that also includes real behaviour and actions (Ham *et al.* 2016). This distinction is best described by the concept of **behavioural gap** (knowledge-behaviour gap, attitude-behaviour gap, value-action gap), that describes how people can think, understand or concern about something in one way, but in reality they do not behave according to their principles (Ham *et al.* 2016; Liobikienė & Juknys 2016). The connections between values, beliefs, norms and actual behaviour are very complicated. There are many theories and studies that focus on these relationships (for example, Stern 2000).

Some of the main questions related to understanding environmental behaviour is to understand why some people are interested in environment and its condition and related to that do more pro-environmental decisions, and why some do not, and how this can be altered. According to Ertz *et al.* (2016, p. 3974) pro-environmental behaviour is “a multi-dimensional construct and considers both private sphere and environment citizenship behaviors, the latter of which will be henceforth referred to as public sphere behavior”. What can affect people are their environmental concern, awareness of consequences, values, etc. (Hansla *et al.* 2008; Stern 2000; Liobikienė & Juknys 2016).



Pro-environmental behaviour can be generalised (associated with concrete field or theme), sectoral-related (for example, recycling), transportation, energy saving related behaviour and environmental friendly consumption related behaviour (Roberts 1995, *cit.* Ham *et al.* 2016). But what can cause this selectivity in behaviour?

Bartels & Reinders (2016) deal with different consumer identities in the context of sustainable behaviour. They explain sustainable behaviour from the perspective of social identity, meaning that people can behave ethically and sustainably in one field, but in another field lack of it (Thøgersen (2006) has detected the same pattern with norms – for different environmentally responsible behaviours people apply different norms), or, vice versa, if a person is concerned about the overall environmental situation and social welfare, the person sees things more broadly and this also spreads to actual behaviour and actions. If we are talking about shaping the behaviour then Bartels and Reinders (2016) have brought out that if a person has identified oneself with one sustainable consumption group, then this not only stimulates current behaviour but can cause a **spill-over** effect, where current sustainable behaviour can extend to other areas (see also Thøgersen & Ölander (2003) for discussion). What's more – the question is how to motivate the spill-over? Bartels & Reinders (2016) suggest that it is important to emphasize moral-ethical aspects. Thøgersen (2006) has detected that if talking about norms it is important to emphasize motivation rather than guilt. Steinhorst *et al.* (2015) has proved that monetary framing or incentives (for example, saving electricity) can cause behaviour change, but they are not that effective as environmental framing and personal norms based incentives when talking about pro-environmental spill-over.

Within the enthusiasm of adoption of new technological solutions to understand consumption patterns, and simplify life, we should not forget about the ground aims of the pro-environmental behaviour and responsible environmental behaviour – that is “to harm the environment as little as possible, or even benefit the environment” (Steg & Vlek 2009). Definitions that are relevant in this context include green consumption, **sustainable consumption and lifestyles**, frugality and curtailment behaviour. Besides increasing resource productivity and eco-efficiency of processes and products we should also focus on shifting from material intensive consumer culture to a society that does not have so many materialistic aspirations (Mont & Plepys 2008).



4.2.2 Understanding attitudes towards environment and technology

Understanding people's attitudes towards environment and technology are crucial when talking about motivating pro-environmental behaviour through smart technology. Therefore a study focusing on these aspects (environmental awareness, actual behaviour, attitudes towards technology, etc.) is conducted among the pilot area residents in Tartu. The results can be used for designing specific experiments for behaviour change.

a) Study outline

Increasing the “smartness” of a city is a popular goal of today's urban regions' development strategies (Albino *et al.* 2015). The core of smart city concept is focused on combating with resource deficiency and environmental problems (incl. global warming) that come along with consumption (Townsend 2013, Calvillo *et al.* 2016, Barnicoat & Danson 2015). The role of technology is to provide information about services and consumption for governments and citizens in order to better organize the city life. However, using technological solutions cannot be a goal on its own. Investments to improve human and social capital and better engagement strategies are important, because people are the ones that will solve social, economic and environmental problems (Ahvenniemi *et al.* 2017).

Consumption behaviour can be divided into two broad categories: direct and indirect behaviour. Direct behaviour includes all purchase, consumption and realization decisions made by people. Indirect behaviour includes environmental activism. According to Stern (2000) individual environmental behaviour is affected by four main factors: 1) contextual factors (marketing, political regulations, technological capabilities, the influence of a community, etc.), 2) values (social-altruistic, egoistic, biospheric), beliefs (responsibility, ecological worldview, environmental consequences, etc.), norms, 3) habits, and 4) personal capabilities (knowledge, financial resources, social status, time, etc.).

The research that has tried to explain the influence of these factors on people's environmental behaviour is immense. It has been found that people with biospheric value orientation are much more likely to act environmentally friendly. However, there are also evidence, that people with environmental concern do not see themselves as acting pro-environmentally. For example, survey conducted by Eurobarometer (European Commission 2008) among European countries showed that 59% of the people claimed that they are willing to buy ecological product but actually have not done so. Many authors say that even though there is a vast amount of literature, there is still confusion about the reasons causing the value-action gap.

In order to reach the goals of low-carbon society it is necessary to adopt green technologies that help to lessen the negative environmental impact and reduce consumption. This, however, at first needs people's willingness and motivation to learn and use new technologies (Chen & Sintov 2016). Having the technology *per se* is not enough – a person needs to integrate it to one's everyday life, change habits. The acceptance of technological innovations has been explained by many theories (Venkatesh *et al.* 2003). According to the theory of Diffusion of Innovations the adoption of new technologies and sharing the knowledge about it depends on people's interests, the length and results of trial period, etc. Vast amount of corresponding research has been mostly quantitative and mainly focused on voluntary adoption. Our case is different – using smart meters and other technological solutions in the pilot area is “forced”. Research that would focus on technology adoption in forced conditions is very rare.



The goal of current research is to find the reasons why people are (not) willing to change their behaviour towards pro-environmental habits and how open they are for technological innovations that help in becoming so. The aim is to find out the attitudes toward environment and technological innovations as well as resulting mentality of the SmartEnCity project.

Research questions are set as follows:

1. What are the attitudes toward environment and technology?
2. How people evaluate the role of technology in environmental sustainability?
3. What are the motives and barriers of using more environmentally friendly technologies?
4. How aware are people about the SmartEnCity project?

We use qualitative research methods, namely 40 interviews that will be carried out among the pilot area residents.

The interview consists of aforementioned thematic blocks:

1. dwelling and mobility – satisfaction with dwelling and neighbourhood, mobility habits;
2. environmental awareness and environmental behaviour – attitudes and beliefs towards environment, actual behaviour;
3. technology – attitudes towards technology, actual behaviour;
4. the concept of smart city and the SmartEnCity project – knowledge about smart city concept and the SmartEnCity project, attitudes toward the project and the foreseen project outcomes;
5. socio-demographic background.

First, we try to categorise people according to their values, beliefs and real-life actions by using different statements (the scale of pro-environmentalism). Then we study the reasons for the presence of value-action gaps. Secondly, we categorise people by their attitudes towards technology adoption using the spectrum of attitudes towards technology with different statements about technology and innovation. In addition, we study what advantages or disadvantages people see in green technologies and why are they willing or not willing to use new technologies. We combine the results with theories and find whether they can be applied on our results. Also we try to find out how aware people are about SmartEnCity project and what are their attitudes towards installed technologies (i.e. the smart home solution). The resulting attitudes and problems are important contributions for social innovation experiments and understanding the willingness of local residents to participate since planned interventions are successful only if some important barriers are removed.



4.2.3 Developing motivation schemes and experiments

With planned social innovation experiments implementing the logic of new business models we would like to understand 1) whether technology as a nudging tool helps to overcome the behaviour gap, 2) how spill-over of knowledge and actions can be achieved, 3) expand the knowledge and encourage pro-environmental behaviour through developing habits and strengthen social learning.

Experiments presented in this chapter do not form a complete list of possible incentives and experiments to drive social change. Rather it is an example of what can be focused on.

a) Incentives and motives for behavioural change

Accepting and using innovative solutions require changes in the individual's way of thinking. People and their behaviour are being influenced by **intrinsic motivations**. Intrinsic motivations are influenced by many personal factors such as socio-economical background, place of residence (urban vs rural), etc. (Stern 1999). Education and information contribute to formation of pro-environmental personal values. However, according to Stern (1999), using only education instrument, the decrease in electricity consumption was only 10–20%. But newer articles (e.g. Pothitou *et al.* 2016) still stress the importance of education in combating climate change.

Behaviour may also be mediated by **extrinsic motivations** such as financial bonuses, political regulations, etc. There is a widespread belief that **financial incentives** are very effective in promoting pro-environmental behaviour, however, scientific research has shown the opposite results. They can, even, influence the intrinsic motivations negatively (Handgraaf *et al.* 2013). The desired effect that is stimulated by the financial incentives can be short-term, it only lasts as long as there are enough financial resources. Often it does not affect the inner values and that's why it is common, if the financial bonuses disappear, that people turn back to their “usual” behaviour (Handgraaf *et al.* 2013). Therefore, developing non-financial incentives, such as improving convenience (Stern 1999), public praise and fixing social norms (Handgraaf *et al.* 2013) are important as well. The most effective interventions are the ones that eliminate some kind of obstacles and raise convenience.

Heiskanen *et al.* (2010) have outlined the following problems that hamper pro-environmental behaviour change (see also Frederiks *et al.* (2015) for detailed list of scenarios what can affect the consumer decision-making and behaviour). These include:

- Social dilemmas: “my effort is useless unless others also contribute”. Therefore, it is necessary to engage the whole community and give feedback about the overall change.
- Social conventions and social-technical infrastructure: fixed notion about the appropriate behaviour.
- Invisibility of the results of behaviour change: a person cannot see the results of his/her behaviour change. Therefore there is a need for a feedback of the overall change.
- Intrinsic and extrinsic motivation schemes: innovations and the resulting behaviour change should originate from bottom-up (intrinsic motivation) and not to be too top-down (extrinsic) approach.

Gardner and Stern (1996, *cit.* Heiskanen *et al.* 2010) have outlined four **types of instruments** that are possible for regulating environment related behaviour:



- regulations and incentives,
- education and raising awareness,
- building/leading pro-environment communities,
- moral, religious and ethical principles.

Awareness raising should be done also on a community level, in order to combat the obstacles mentioned before (social dilemmas, etc.). In UK Green Street²⁵ and The Tidy Street²⁶ project have shown very positive results regarding the overall household energy consumption decline, mainly because of the increased community communication that helps to confirm that others are also doing their bit, gives feedback (Heiskanen *et al.* 2010; Stern 1999) and it adds a competition aspect as well. Community level action is strongly bound with the concept of **social learning** (Bandura 1963, Bingham & Conner 2010). The goal is to change people's consumption practices by observing how other are acting and reacting to this information, communicating and exchanging knowledge. Widespread techniques are, for example, collaboration and knowledge exchange, social networks, using expertise knowledge. Instruments for this are, for example: wikis, blogs, podcasts, social networking, discussions, seminars, rating and reviews.

Since individual variability is great and the free will and educating of people might not produce the desired effect (Iosifidi 2016, Kiisel 2015, 2016) then there are some authors who accentuate the need to focus more on structural operation of the society when planning behaviour change. Among these can be normative solutions (laws, regulations, policy and recommendations, etc.) that guide our behaviour (for example, Pohjolainen *et al.* 2016), but also infrastructural solutions that hinder or favour some behaviours (for example, Fujii (2006) who focuses on perceived ease of implementation). Technology can help to achieve some of these goals through its power to simplify the information or actions people have to analyse or carry out daily.

²⁵ <http://www.telegraph.co.uk/news/earth/earthnews/3347870/Green-Streets-project-reduces-carbon-footprint-and-energy-bills.html>

²⁶ <https://collabcubed.com/2011/11/01/the-tidy-street-project/>



b) Basis for the experiments

Tartu will renovate and smarten about 20 hrushovkas. During this Tartu wants to carry out social innovation that would benefit the residents and the city. Key themes are “learning to live” in a renovated and smarted house, increasing the social benefit of smart meters, social learning and smart mobility. The proposed experiments are based on the following principles and assumptions:

- We have detailed individual data about the households consumption behaviour (i.e. energy, water consumption, etc.) starting from the point when smart home solutions are installed.
- Households in one building or one household association form a community whose members will communicate with each other, learn from each other and encourage each other towards sustainable behaviour.
- Pro-environmental behaviour in pre-defined fields can be rewarded using different motivation schemes (recognition, discounts, bonus systems, etc.)
- Important stakeholders are Tartu City Government, Green Movement of Estonia, households, chairmen of housing associations, enterprises.

Proposed experiments focus on three themes: energy behaviour on a household and building level, mobility, and social learning.

With the experiments it is important to focus both on intrinsic as well as extrinsic motivations. These include educating and learning, but also the possibility to save money.

c) Descriptions of the experiments

For the experiment in the SmartEnCity project we have proposed four interventions that would allow to analyse their potential effect on consumer behaviour. The experiments are aimed at specific behaviour change (for example, energy, transportation) and overall changes in lifestyle (learning communities where the aim is at increasing overall knowledge).

Change in the energy use of the household that aims at behaviour change in consuming patterns and daily habits in the household level. In every flat there are sensors, meters and a Smart Home Solution panel, that measure, monitor and record the resource (e.g. energy, water, etc.) use. The users are provided with easily understandable graphs and visualizations about their resource use. The main idea is to create competitive action inside the household – can I decrease my consumption? – comparing the results of *status quo* with more sustainable behaviour. There will be a level-system developed that would allow to measure the change and grant bonuses for more sustainable behaviour. Bonuses are designed to motivate people to change their behaviour. Very important is the educating of residents on environmental matters, that will be carried out during the base period of monitoring the resource use. These involve meet-ups, seminars, movie nights, tea-parties or other inclusive methods. It is important to acknowledge that mere information may not be sufficient (Stern 1999). Information is effective only then, if it is easily understandable and targeted at the right group. That is why it is important to include hands-on-educating of the residents and use persuasive systems and technology (such as the Smart Home Solution panel).

The value proposition includes: 1) for the residents: financial saving through the use of technology, smaller ecological footprint by decreasing direct energy use; 2) for the city: strengthening the image of Tartu as a smart city, increased energy efficiency of the city.



Change in the energy use on a building level that aims at strategic consumption. It is an extension of previous proposed intervention where the same monitoring system is implemented on a building level. There is a competing factor as well, but instead of household level, community action on a building level is required to succeed. This competitive action is aimed to increase communication and discussion between households, strengthen the community and improve the collective action for common good. This last point is very relevant since the invisibility of behaviour change consequences and social dilemmas are the factors that inhibit change in behaviour and contribute to the free-riding effect (Heiskanen *et al.* 2010; Frederiks *et al.* 2014). The competition between buildings can provide insight into the collective impact of saving.

The value proposition includes: 1) for the residents: financial saving through the use of technology, smaller ecological footprint by decreasing direct energy use, stronger community; 2) for the city: strengthening the image of Tartu as a smart city, increased energy efficiency of the city.

Popularizing greener and more sustainable mobility aims at promoting the use of green transport modes. The concept is based on the idea to create a transport (information) system that allows using a unified and connected card and bonus (e.g discounts, credit) system for different transport modes (f. e. public transport, bicycle rent, electric taxi and electric car rent, etc.). Possible partners in Tartu are, for example, gas buses (Tartu city), (electric) bicycle rent (Tartu city), Elektritakso (electric car taxi) and MiniRent (electrical car rent). The intervention is based on the symbiosis of two conceptual ideas of business model innovation (SustainAbility 2014): 1) building a marketplace that includes building new markets for their products in innovative and socially responsible ways, and 2) alternative marketplace where new transactions are being used instead of traditional methods to unleash untapped values and increase social and environmental impacts. To conclude, this means increasing the number of users by customer loyalty and promoting the use of green transport among those people who are preferring private cars.

The value proposition includes: 1) for the city and pilot area residents: cheaper prices, smaller ecological footprint, more flexible transport system; 2) for the city: strengthening the image of Tartu as a smart city, less cars, less pollution, less noise, safer environment, more sustainable transport system through the increase of customer base.

Promoting social learning and strengthening peer to peer community aims at increasing the knowledge base of people (pilot area residents) about sustainable behaviour and smartening the community. Besides formal information channels, informal information plays an important role in receptivity of new information and adoption of new technology. The idea is at first to teach those who are the most interested in the topic (expert knowledge spread in seminars, meet-ups, workshops, etc). The topics include the overall concept of sustainable living, energy use, sustainable and smart transportation, living in a smart home, etc. These people can further be the messengers and teach other community members.

The value proposition includes: 1) for the residents: increase in knowledge base, smaller ecological footprint; 2) for the city: stronger communities, active citizenship, strengthening the image of Tartu as a smart city.

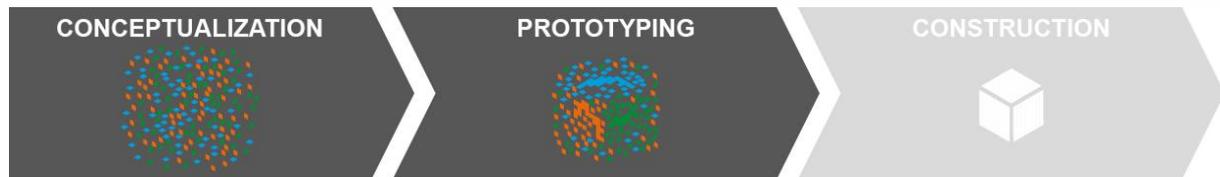


d) Seminars with consortium

Work within consortium has two directions. Firstly, project engagement group meetings held twice a month. Themes posed there, among others, focus on developing communication activities and engagement strategy, surveys and social innovations. Secondly, theoretical seminars and lectures about energy efficient urban planning for wider public and pilot area residents are held. This allows to transfer expert knowledge to the wider public. There has already been two theoretical seminars. First presenter was Peter Rathje and the topic was “Mobilizing actors for the local energy transition”. Second presenter was professor Helmut Krapmeier and the topic was “Architecture and Sustainability. Experiences from Austria, theory and performance in practice”. The lectures and seminars are planned to continue covering a wide range of different topics related to smart city planning (for example, mobility, etc.) and more detailed project related themes.



5 Phase II – Prototyping



5.1 Citizen Engagement Strategies

5.1.1 Extraction of essential elements of Citizen Engagement

Some of the elements that have been identified in the previous phase are:

- Target Groups (To Whom are we delivering the activities?)
- Key Actors (With Whom are we reaching the Target Groups?)
- Governance (Who are the decisions makers for the Strategys and implementations?)
- Value Proposition (What are we communicating and offering?)

New Key Areas can be identified through more participatory observation activities. Individual interviews with relevant actors and best practice generators can also help on understanding the keys to success. This helps prioritizing what is more relevant in the Key Area definition.

5.1.2 Link the essential elements between each other

Another important part of the work is to understand the possible relations in between the areas that have been identified as relevant in the citizen engagement process. The relation between the Governance and the Value Proposition for example. But the real link comes from the questions that are made around these aspects. Specially when each LH case has its own idiosyncrasy.

5.1.3 Key Areas Specifications

a) Citizen Engagement Strategies (How)

Main specifications are detailed in the point 4.1.1 State of the Art of the Citizen Engagement. **How each City designs and implements its strategy depends on the initial conditions of other key aspects that will be described in the following pages.** Target Groups (To Whom are we delivering the activities), Key Actors (With Whom are we reaching the Target Groups) and Governance (Who are the decisions makers for the Strategies and implementations and how these implementations are being done). The purpose (Why) of the Citizen Engagement Strategy also plays an important role in the this Key Area.

b) Key Actors and Roles / Formal and Informal Leadership (With Whom)

There are eleven inter-dependent priority areas that are considered to be the most important concerning Smart Cities and Communities, and the intersection with the areas of energy, transport and ICT.

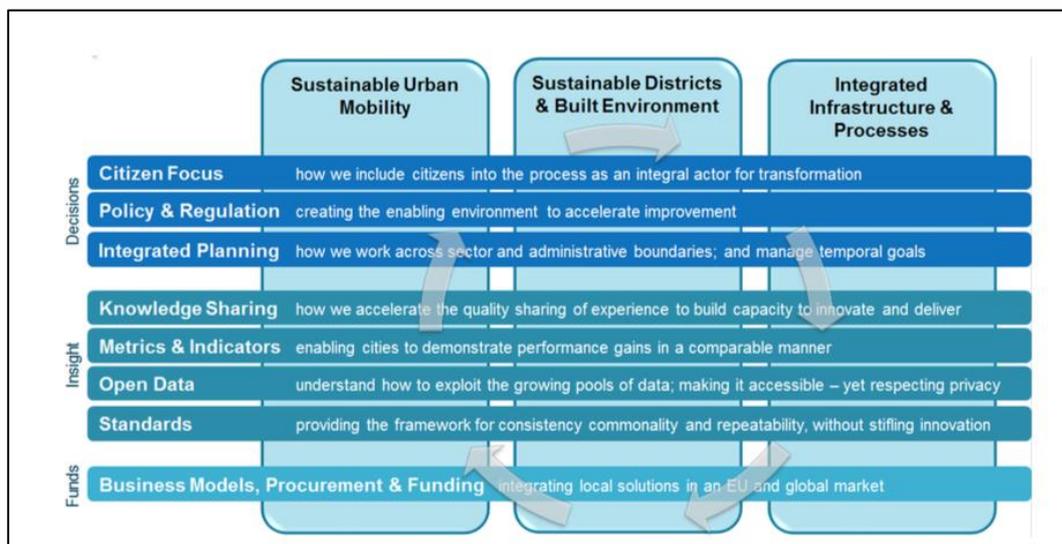


Figure 8: Priority Areas

In the figure above, the Citizen Focus takes care about *how we include citizens into the process* as integral actor of the transformation.²⁷ One of the crucial parts when designing a citizen engagement process is to define **With Whom we implement the inclusion of the citizens into the process. This means that different partners can help along the project to achieve the goal. In the refurbish case this means** that the strategy can be designed in a way that the targeted house tenants can be positively motivated to refurbish their house.

Actor can be also defined as interlocutors that get in contact with the target groups. Some LH Cities have more permanent interlocutors than others. As it will be shown in the **Construction Phase**, if there is a permanent interlocutor, for example a House Association, the interlocutors will tend to be more permanent. In the cases where there is no House Association, It can happen that the type of partnership of the actors that are needed for this

²⁷ European Innovation Partnership on Smart Cities and Communities – Strategic Implementation Plan

initial phase (information, consultation) can be less useful during other phases in which the refurbish sales-contracts need to be closed. In any case, the actors changes must be explained to the citizens as integral strategy that responds to a continuum.

The actors that are select to be partners during the process **can play different roles**. It is important to define and agree the role that each actor is playing in the strategy.

In sociology there are different categories of social roles²⁸:

- Cultural roles: roles given by culture (e.g. priest)
- Social differentiation: e.g. teacher, taxi driver
- Situation-specific roles: e.g. eye witness
- Bio-sociological roles: e.g. as human in a natural system
- Gender roles: as a man, woman, mother, father, etc.

In their life people have to face different social roles, sometimes they have to face different roles at the same time in different social situations. There is an evolution of social roles, some disappear and some new develop. Role behaviour is influenced by following aspects:

- The norms, determining a social situation.
- Internal and external expectations are connected to a social role.
- Social sanctions (punishment and reward) are used to influence role behaviour.

In the same way the role that certain actor will play in the process ca be agreed. As example, different kind of associations can help to disseminate the project in the neighbourhood. In this case their role is disseminating the project.

Other important aspect is to make a differentiation in between the actors that are formal leaders and actors that are informal leaders. A **formal leader** could be a House Association manager or president. **Informal leader** could also be associated with “innovators and early adopters” that are described in the diffusion of innovations theory that will be shown later. Dean Pielstick did a comparative analysis about Formal vs. Informal Leading concluding that there are important and significant differences between formal and informal leaders²⁹.

Pointing out some findings of above mentioned comparative analysis remarkable aspects about **informal leaders** are:

- More likely to listen and seek to understand.
- They engage in interactive dialogue.
- They are more open to sharing, giving and receiving, accepting criticism and showing appreciation.
- They communicate by example and walk-the-talk.
- Are more likely to use stories, to inspire, encourage, and motivate, and to weave a higher purpose into the dialogue.
- More likely to be inclusive by fully engaging others, collaborating with them, and recognizing their needs.
- More likely to empathize with others and demonstrate equity in their relationships.
- They are altruistic, exhibit honesty and integrity, and emphasize service above self.

²⁸ https://en.wikipedia.org/wiki/Role_theory

²⁹ Pielstick, C.D Formal vs. Informal Leading: A Comparative Analysis (2000)
http://openknowledge.nau.edu/1643/1/Pielstick_CD_2000_FrankeWPS_00-04.pdf



This perspective aligns with the diffusion of innovations theory, mentioned in the social innovation model description, in the perspectives on innovation section. As mentioned there, a given population consists of five categories of adopters differentiated on the basis of characteristics of the innovation itself, communication channels, time and the given social system or context in which the innovation manifests (Chen & Sintov 2016): innovators 2.5%, early adopters 13.5%, early majority 34%, late majority 34%, laggards 16% (Figure 9).

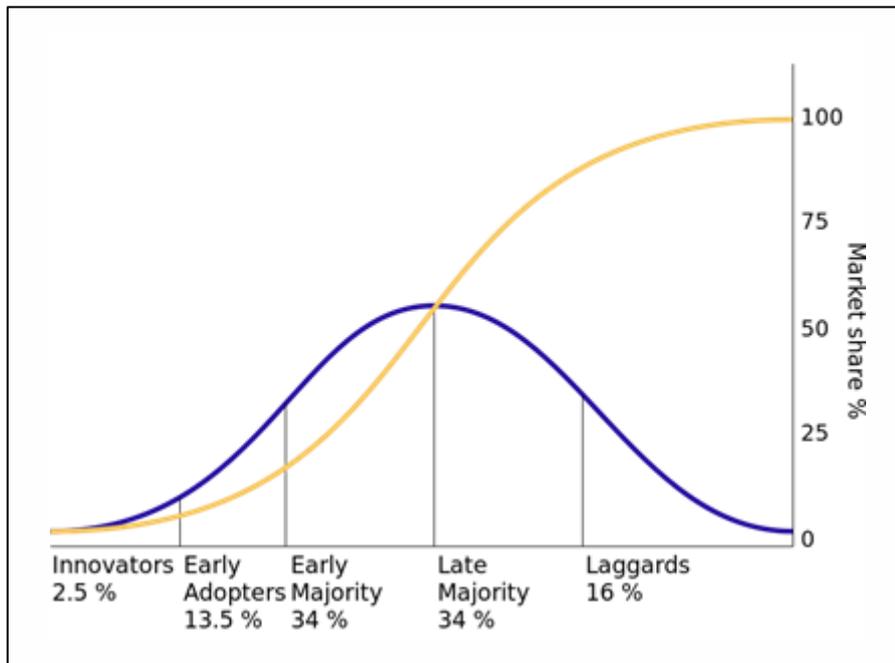


Figure 9: The diffusion of innovations (Source: Wikipedia³⁰)

In the case of the the informal leaders engagement process there are also some examples in the CO₂ emission reduction education programmes. As it will be seen in the Construction Phase, there is the possibility of educating families that once they achieve the programm goals can work as **ambassadors** (see Sonderborg Case).

The informal leaders can be engaged for education purposes or for purposes related to the product-service proposal. There is a moment in which the value proposal itself plays an active role. In this phase also the co-definition takes part, but under other conditions. In anycase, the sales process will differ depending on each LH project circumstances.

³⁰ https://en.wikipedia.org/wiki/Diffusion_of_innovations

As example, some components of the refurbish product can be contrasted with informal lead users. They can participate adapting the value proposal before presenting it to the rest of the target group. The involved lead users also could be helpful actors for the dissemination of the features of the components in a understandable way.

In both cases, when the purpose is educational or concept-product-service related, the process consists on attracting and capturing informal lead users that at the end of their training will spread their learnings to others. Somehow, they can become ambassadors that later on will contribute to spread and grow the message to the other target or target groups.

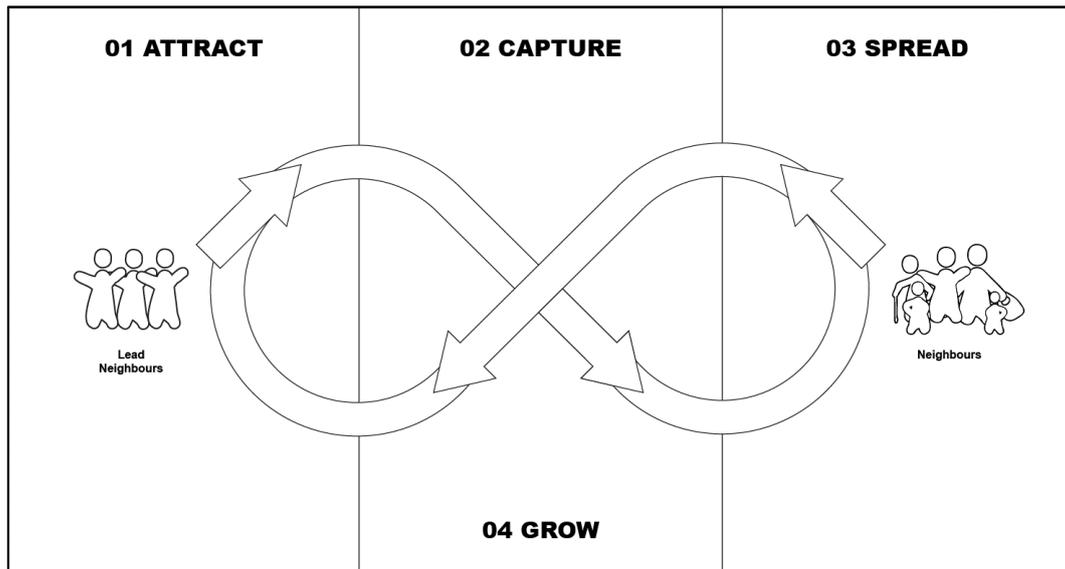


Figure 10: Viral Loops Making Self Marketing Apps³¹

Following the contributions of the **D.2.5 Integrated Management models for large scale Smart City transformation projects**. *The owner is a decision making body in the process.* The owner takes on a substantially greater and more active role in evaluating and influencing design options. Additionally, the Owner is required to participate in establishing project metrics at an earlier stage. In light of the fluid operation IPD requires, the Owner will also be called on more often to assist in resolving issues that arise on the project. As member of the decision making body, the owner will be involved on more project-related specifics and be required to act quickly in this regard to allow the project to continue efficiently.

³¹ <http://www.slideshare.net/jjeffryes/viral-loops-making-selfmarketing-apps/10>

c) Target Groups (To Whom)

Citizens:

Citizens from each of the Lighthouses are a target audience that need to be informed about the project Smartency project. This part of the job is more suitable for communication and marketing teams who generally measure the engagement in terms to brands and commercial managers. Their job is about giving answers to questions like:

What is the state of our relationship with the City related to Smartency?

Do people like us or do they hate us? If they like us, can we make them like us more? If they hate us, what do we need to do to turn that around?

This teams tend to improve the relationship between the City and the Smartency. The key tools available to the communications and **marketing team** are control of the organisational “brand” through **events, media or similar**. These are the tools they have control over, so these are the tools they spend most of their time thinking about and implementing.

This aspect of the engagement can also be related with the Smartency project’s dissemination work. Normally the Smartency stakeholders are more familiarised with citizen engagement from the marketing perspective than from the community development perspective.

District Area - Neighbours of the Refurbishing Areas:

In the 3 cities questionnaires, each of the Lighthouse Cities were asked for a small description of the urban and socioeconomic characteristics of the Neighbourhood. The goal is get information about the target group of the house refurbish offer.

The district renovation intervention areas are community interaction places and spaces. For this reason, it is recommended to be assessed by teams that are specialised on community development in these areas. Specially at the beginning of the process, in the information and consultation phases described in the Key Area 1, Citizen Engagement Strategies.

When community actors like associations or public services located in the intervention area are informed about the project through the Municipality community developers the **social perception of the project increases positively**. One of the missions of the Community developers it to take care that the existing networks in the community of the neighbourhood, also taking care of places and spaces of the area including public facilities, were casual or informal relations are created. These connections create a sense of belonging and community engagement.³²

The situation varies depending of the **existing network** in each of the Lighthouse project District Renovation Areas. As example some Cities will have a House Association, some of them not. But as explained in the Key Area 2, Actors Roles and Formal Informal Leadership, is better to have a complete idea of the existing network even in the cases where there is a House Association interlocution is guaranteed.

It is recommended to have map out the formal and informal network relationships that exist in the District Area. Community networks work like mushrooms mycelium. Mushrooms are made of a mass of thin threads known as mycelium that acts as a kind of underground internet, linking the roots of different plants. Mushrooms help out each other by this fungal

³² <http://www.bangthetable.com/what-is-community-engagement/#3>



network, sharing nutrients and information.³³ Community developers understand how this linking roots work. This information is important because it helps **to design a better house refurbishing service commercial strategy**. But is not the unique information that is needed to for the commercial strategy. Mapping individual house communities target group is also important.

The District Area is also the space for the District Renovation. This is the area in which the urban planners can think and design participation activities with the community.

Neighbourhood Associations-House Associations:

The existence or not of House Associations in the intervention zone makes also differences in the citizen engagement strategy. Anyhow the existence of a House Association that works as interlocutor of the project does not ensure, 100 per cent, the success of the commercial strategy. The same occurs with the Neighbourhood Associations.

Depending on each LH City situation the number of people who makes the decision on refurbishing the building is different. As it will be explained in the Construction Phase, the decisions in LH Vitoria-Gasteiz will be made in between 4 and 12 dwelling owners. The total targeted dwellings are 1305.

Small questions can be posed here:

- Are the formal leaders, associations the unique way to develop the commercial strategy or are there complementary strategies?
- How can a space for interaction be created in the intervention area and neighbourhood target groups?
- Which kind of citizen engagement purposes would this space respond to?

Individual house communities - Community of property owners:

Individual house community is another collective dimension, is the minimal collective unity where decisions about the building are made. Normally there is a representative in each individual house community which is elected periodically. He or she plays a formal leader role which rotates periodically among the tenants of the house building.

This will explain in more detail in the Construction Phase, point 6.3 Neighbourhood Organisational Systems.

Owners and Locators:

This is the last decision unit, the individual unit. This is where the individual decision is made. This unit is connected to each of the target groups we have mentioned before. **Socioeconomic aspects** are very important factors to understand which is the profile of people the service offer is targeted to.

³³ <http://www.bbc.com/earth/story/20141111-plants-have-a-hidden-internet?ocid=ww.social.link.twitter>



d) Activities, materials and channels for the citizen calls (What)

As remarked in the Key Area 1 there are varying needs for citizen comments or involvement depending on the particular type of situation. At times, local governments will simply want to get information to citizens about a new service or program, an upcoming event, important issues, or a temporary service disruption. At other times, communities may want to gather information or opinions from citizens, or even recruit citizens to study issues in depth and provide advice. At other times, it will be desirable to work directly with the public and even partner with citizens to develop alternatives, creative ideas, and solutions to community-wide concerns.³⁴

Two different needs will be attended in this Area:

- From one side the marketing aspect of the citizen engagement, that will not be specifically centred in the Citizen Target Audience, but also with the other Target Audiences mentioned in the Key Area 3, Target Groups. The objective that will generally pursued here, related to the engagement triangle³⁵, will probably be Informing. This area can be more related with **on line and media communication channels**.
- The other need will be related with the development of off line activities like public or private meetings, workshops, surveys. These are more **off line face to face activities**. The offline activities will take place in different **Spaces**.

Community Engagement is about taking care about these two elements. From one side, projecting the brand of the Smartencity Project and its representing institutions through communication and transparency and from another building trust around the project value proposal which needs to be followed with a face to face strategy.

These two elements should be integrated in the same strategy which in this area could be defined as an off on line strategy of the Engagement. Although we are generally quite use to develop marketing strategies integrating them with the off-line ones can be new for us.

The best option **to avoid that the Citizen Engagement Strategy remains in the Marketing perspective is to create a team with people with marketing and community development perspectives.**

The on/off-line integration is also reflected when the off line activities are published in the web including the uploading of the leaflets that are delivered in the face to face meetings.

The design and creation of leaflets and panels about the project proposals with simple understandable information are also recommended.

³⁴ <http://mrsc.org/Home/Explore-Topics/Governance/Citizen-Participation-and-Engagement/Communication-and-Citizen-Participation-Techniques.aspx>

³⁵ <http://www.innersydneyvoice.org.au/pub/leading-practice-community-engagement-some-ideas-for-urbangrowth-nsw/>



e) Value Proposition (What)

The phrase “Value Proposition” (VP) is credited to Michael Lanning and Edward Michaels, who first used the term in a 1988 staff paper for the consulting firm McKinsey and co. In the paper, which was entitled “a business is a value delivery system”, the authors define value proposition as “a clear, simple statement of the benefits, both tangible and intangible, that the company will provide, along with the approximate price it will charge each customer segment for those benefits”. In a modern, clear cut definition, Labeaux defines a value proposition as a statement that clearly identifies what benefits a customer will receive by purchasing a particular product or service from a vendor. According to Hassan, however, there is no specific definition for Value Proposition.³⁶

As remarked in the European Smart cities Strategic Implementation plan³⁷ Smart cities should be regarded as systems of people interacting with and using flows of energy, materials, services and financing to catalyse sustainable economic development, resilience, and high quality of life; these flows and interactions become smart through making strategic use of information and communication infrastructure and services in a process of transparent urban planning and management that is responsive to the social and economic needs of society.

But Value Proposition concept and development are more complex when the citizens are engaged in the process. Specially at the very beginning of the project when the value proposal is more conceptual. In the above mentioned implementation plan the European Union points out that *“experience from the private sector can help, as many of the concepts, processes and tools from business can be applied to the public sphere to help governments improve their own feedback and improvement cycles, whether they relate to infrastructure, societal issues or other problem areas”*.

Giving relevant information about the project with the citizens from the beginning of the project is challenging even for private companies. In any case, when the information strategy works in the right direction the result can be that the citizens and different target groups increase the positive perception of the project proposals.

³⁶ Hassan, A. (2012), "The Value Proposition Concept in Marketing: How Customers Perceive the Value Delivered by Firms", International Journal of Marketing Studies, Vol. 4, No. 3.

³⁷ European Innovation Partnership on Smart Cities and Communities - Strategic Implementation Plan



CEE - H-Enea Living Lab Team we created a 4 step iterative process that enables the Stakeholders to see where they are in relation to what they propose and which is the feedback of the citizens or users in this case. This process was named as the **Value Proposal Definition Process**.

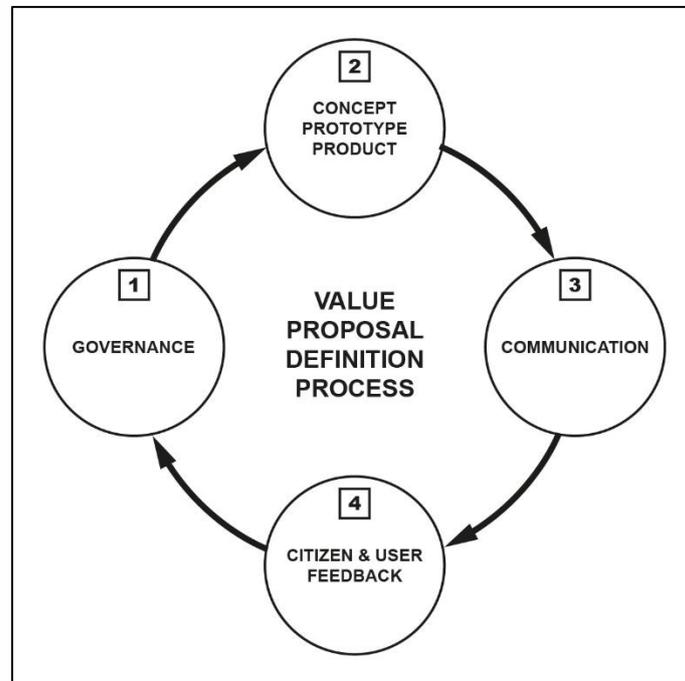


Figure 11: Value Proposal Definition process

The step 1 takes care of the **Governance**. Another Key Area of the citizen engagement strategy that will be described in the section f) of the Key Areas. This is the part of the process where the people who are governing the project or project activity decide what to communicate about the project at certain point of the process. Depending on the year, specially in the beginning, the products or services will be more in a conceptual state. For this reason, we make a difference in between **Concept**, **Prototype** and **Product** in the step number 2.

The difference in between Concept, Prototype and Product plays also an important role in the **Communication**, step 3. is more difficult to explain concepts than prototypes and products. But this early communication with the citizen also gives information about the **Citizens & Users Feedback**, step number 4. The next step is to go back to the 1 step again and evaluating the results.

Value proposition in SmartEnCity projects:

SmartEnCity project has different value proposals, some of them are product/services others are educative activities around the CO₂ emissions or similar.

Going back to the Value Proposition Definition Proposal, the users and future customers should be periodically informed about the concept of product/service. This should happen as regularly as the corresponding working group can offer a quality message to the target groups.

f) Governance (Who)

As remarked in the **D.2.4 City needs and baseline definition process and methods**, the Citizen engagement approach should take into account the City existing factors as governance culture, administrative structures and decision making frameworks. These aspects are crucial to avoid making promises to the Citizens that cannot be fulfilled. Following this statements, it is also argued that the City Engagement Strategy should be co-defined from the very beginning of the process and in direct connection of the Communication Strategy of the whole project.

Following the previous statement, Smartencity Project Proposals require a Multi-level governance that implies a wide range of policy instruments, as urban planning or urban regeneration projects require: “tax regimes and financial instruments for stimulating local investment, planning regulations, development programs that offer subsidies for particular activities, specific policies promoting integrated approach or mechanisms for public participation” (RE-Block, 2015b). Since these instruments are usually managed by different departments and levels of public administration, an integrated approach requires a framework for the coordination of all these public partners (Tasan-Kok & Vranken, 2011)³⁸.

Having more experience integrating approaches in between administration departments is an advantage for the value proposition definition but this can not always factible. Anyhow Governance can be more operational if different motor groups are created around the different proposals.

In any case, **Citizens loose confidence when they experience inconsistencies about the product or services proposals.**

³⁸ Tasan-Kok T., Vranken J. (eds) (2011). *Handbook for Multilevel Urban Governance in Europe*. European Urban Knowledge Network, Wilco, Amersfoort.



g) Spaces; Online & offline (Where)

As described in the Key Area Activities, materials and channels for the citizen calls, community Engagement should respond to two different needs:

- Informing through communication and transparency
- Building trust around the project value proposals

Additionally, another important aspect is the Where, **the space and spaces where the interaction with the citizens happen.**

Spaces can be **digital or physical** depending on the purpose. In any case, **one of the challenges this project faces is to prevent that the citizens have the perception of a fragmented engagement experience around the Smartencity project.**

A fragmented story is like a film with a bad script, in the sense you can not reproduce “what happened” to someone else. The fragmentation experience can be avoided creating a story. The citizens can at the same time be observers or protagonists of the story.

The Space together with a good script is the perfect body where the interaction with the Citizen occurs.

Physical spaces:

- Office: purpose decision making individuals
- Civic Centres Neighbourhood: exhibitions and education spaces
- Libraries
- House Association rooms
- The homes where the Smartmeters are being installed

Online spaces:

- Web Pages, existing or new ones.
- Social Networks: facebook
- Others



h) Purpose (Why)

As mentioned in the State of Art, the introduction of the user/citizen from the beginning of the project adds complexity to the project planning. The planning will have to be adapted depending on how the value proposal is adapted to the strategy. The strategic intent³⁹ is a middle stage in between grand visions and specific plans. Tactics is knowing what to do when there is something to do, strategy is knowing what to do when there is nothing to do (Savielly Tartakower, chess Grandmaster).

Big projects have big missions that have to be brought to a middle stage visions through specific plans and activities. Citizens need a good story, a good script of the Smartencity project in each LH Ctiy. The engagement experience should be as less fragmented as possible. Citizens are observers and protagonist at the same time.

As mentioned “In Studio: Recipes for Systemic change book”⁴⁰, vision alone is hard to act on. The difficulty is on winning consensus, which means that conversations often remain at a fairly abstract level. Nevertheless, when consensus does come, action follows and therein lies the dangers of having strong vision but fuzzy intent. So this means generating a space to answer this questions:

- Vision (why should we act?)
- Intent (what should be done?)
- Plan (how will be do it and who should be involved?)
- Feedback loops that guide the why, what, how and who

i) Reshaping Value Proposition (Feedback)

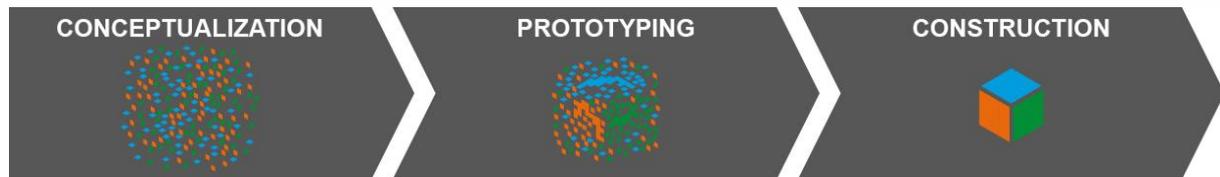
As pointed out in the Value Proposition, Feedback culture should be introduced in the Value Proposition development processes. Citizen or user feedback is key in these processes. The challenge is defining the user role in this feedback interaction processes.

³⁹ <https://hbr.org/2005/07/strategic-intent>

⁴⁰ http://www.helsinkidesignlab.org/peoplepods/themes/hdl/downloads/In_Studio-Recipes_for_Systemic_Change.pdf



6 Phase III – Construction



6.1 Mapping the Citizen Engagement Strategy of each LH City

6.1.1 Process description

Key Area specifications developed in the Prototyping Phase generate the conditions to create a common frame that can be applied with all the LH Cities. From these previous specifications, a new battery of questions is generated “*second questionnaire*”. The battery of questions is classified per Key Area and then sent to each LH City. After the reception of the fulfilled questionnaires, one of the tasks is to identify information gaps. The information gaps are fulfilled with a new battery of questions that are identified as “*third questionnaire*”.

The goal is to find a way to describe the reality of each LH City in an homogeneous way. Homogeneous in the sense of respecting the context, initial conditions and idiosyncrasy of each LH City.

The 3 LH Cities returned questionnaires, second and third questionnaires, are analysed. The result of the work is presented per City Case. Each City is delivered in a long and detailed version and in a Map version. The Map is divided in the sections that have been previously defined along the Conceptualization and Prototyping phase.

The Map has been named CES Model, the Citizen Engagement Strategy Model. The purpose of this model to create a frame that can be useful for Cities that are developing citizen engagement strategies that involve the offer of innovative services and products . At the same time, this citizen engagement processes are willing to create the conditions that enable the change of citizen’s mind-sets’ and behaviour (Co2 emission reduction in this case).

A small section has been dedicated to understand how each LH City neighbourhood organizational system works and operates in refurbishing decision making process. Initial conditions of each LH City play an important role in the achievement of the refurbishing area project goals.

The final part of the process consists on analysing the detailed versions of each Cities and re-classifying the information inside each Key Area. This re-classification brings again the possibility to make a new comparison in-between the three LH City realities. The result of this new comparison is the evaluation.

6.1.2 Second Questionnaire: questions per Key Area

A list of battery of questions have been sent to all the LH Cities. Questions are classified per Key Area. As described before, after the 3 fulfilled questionnaires are received information is analyzed and information gaps are identified. A third questionnaire is sent in order to complete the needed information. (see Annex 1)

6.1.3 Third questionnaire: Identifying and Fulfilling the information gaps

Gaps identification helps on refocusing or being more accurate with the questions that where done before. The third questionnaire's questions are not similar for each Lighthouse City. Is interesting to identify that the information gaps occur in the following Key Areas: Target Group and The Value Proposal. (see Annex 1)



6.2 Citizen Engagement Strategy Organization Model Application

6.2.1 Tartu Citizen Engagement Strategy and Deployment Plan



The Citizen Engagement Proposal is done by the **Engagement Working Group** and the **Steering Committee**. The highest authority is *Mr. Raimond Tamm*, project manager of Tartu LH.

The most important stakeholders include the Citizen Engagement Working Group (consisting of representatives from the SmartEnCity partners):

- The main representatives from Tartu City and its Communication Department (*Raimond Tamm, Lilian Lukka, Helle Tolmoff, Anneli Säälük*)
- Institute of Baltic Studies (*Merit Tatar, Andra Somelar*)
- The Regional Energy Agency (*Martin Kikas, Marek Muiste*)
- Representative of one pilot area housing association (*Tõnis Eelma*)
- The University of Tartu (*Rein Ahas, Kristi Post, Pilleriine Kamenjuk, Veronika Mooses*)

The Citizen Engagement Working Group consists of the above mentioned members (some of whom also belong to the Steering Committee Group in Tartu LH – Raimond Tamm, Merit Tatar, Andra Somelar, Tõnis Eelma, Rein Ahas, Pilleriine Kamenjuk, in addition to the additional members from Tartu City and IBS).

All relevant local partners meet in bimonthly Engagement Working Group meetings. As there is overlap among members with the Tartu Steering Committee, all relevant activities and event organizations are aligned between the two groups. As both groups also include representatives from Tartu City, it is ensured that the proposed strategies are also in line with local level goals.

Housing Association = Building associations

All pilot area houses have Housing Associations that are made up of representatives/owners of each apartment in the building. Building associations are free-form bodies that consist of representatives from each apartment and that make decisions for the building with the majority vote. House Association of each house signs the contract with Tartu City (who in turns pays the construction company directly).

Each housing association is a separate entity and there is no common representative board for all pilot area houses. However, each housing association has its own representative board among the apartments. Building association consists of representatives from each apartment who are interested in the most economically viable and affordable solution and also in raising the price of the property and decreasing bills.

Housing Associations communicate information to the people in their house and make the ultimate decision of whether to join the renovation project.



Administrative Companies

Administrative/holding companies have signed contracts with the housing association to manage certain services for them. The houses still have building associations but have delegated some of their responsibilities to the administrative company. Half of the houses in the pilot area are also managed by five different holding/administrative companies. Such administrative company usually manages several buildings at once and is interested in the most economically viable solutions.

Other Stakeholders

They help with engagement and communication processes:

- *Telia* (education on smart home system, implementation of the platform)
- The Estonian Green Movement
- *KredEx* financing institution (offers additional financial support for the housing associations)
- Building associations (free-form bodies that consist of representatives from each apartment and that make decisions for the building with the majority vote)
- Administrative/holding companies (bodies that manage several buildings at once)
- Other local associations, unions and bodies



Abstract

The main milestone is to have the required number of houses engaged in the project (majority building association decisions made, technical designers employed and first steps towards renovation made).

One strategy through the project and in proactively engaging the target groups is to provide educative programme for them in order to ultimately create a smart community who will be collaborated and empowered in future smart Tartu development.

More detailed description

In case of Estonia, hrustsovkas make up a panel building type that was designed in the end of 1950's during the reign of Nikita Khrushchev and which were constructed in the 50's - 70's. With an average life cycle of 30-40 years, many of these buildings have already outlived their time, meaning that the shortcomings in quality are becoming increasingly evident and might even pose a threat to their residents. Hereby, the Tartu project proceeds from an understanding that new buildings are constructed according to high contemporary standards and are thus energy-efficient anyways – the true challenge is how to retrofit the old panel buildings that have great energy saving potential.

Tartu will use its pilot area in the city centre as a testing ground for the prototype solution to this problem. Throughout the project, not only will the buildings be refurbished but citizens will participate in the process as well. Tartu aims to join renovation activities with citizen engagement techniques in order to “smarten up” its citizens together with the buildings, ensure mutual learning (both of new technologies and to facilitate behavioural change) and to contribute to the formation of a modern, smart and highly attractive city.

Tartu has become a prominent hub for innovation in the region, boasting and pioneering innovative solutions such as m-parking, e-voting, paperless government, participatory budgeting, etc. since the early 2000s.





In this area we are not including all the target groups that are included for the Global Communication Strategy in which other Stakeholders and the City of Tartu is included. The goal of this Area is to focus as much as possible in the Project Value Proposal Targets: Refurbishing and Education on energy consumption reduction. This means the Pilot Area Residents.

Pilot area

The majority of the residents are within the **20-39 age** demographic, with a more or less even distribution of men and women within that demographic. Overall, however, the women outnumber the men (2020 women and 1450 men).

The education level of the residents: Secondary education or below=570, High school education and vocation=1370 and Higher education=1220, N/A=30.

This shows a demographic of mostly young and middle aged people, the majority of whom have at least a high school degree or vocational educational.

Other factors to take into considerations:

1. It is very likely most of the younger population are tenants, majority of which are students;
2. The majority of the decision-making is done at building association level and individual people may be overruled and/or outvoted at apartment owner meetings;
3. A minority of the people are Russian speakers;
4. There is little feeling of community/unity both at building and pilot area level.

The study among the pilot area residents took place in autumn 2016. A short questionnaire was distributed to all pilot area apartment building representatives and a total of 205 responses were collected. The study revealed that out of the respondents:

- 85% are apartment owners and 79% live in the houses;
- 90% are interested in renovation;
- about 87% are somewhat active internet users and only 12% do not have internet at home;
- 60% are women and 40% men, an overwhelming majority are Estonian speakers and have a higher or a vocational education, and most are in the 27-40 (34%) and 41-65 (43%) age group.

According to the residents interested in renovations, the three most important reasons for renovation are:

1. Helps cut down on household costs (72%)
2. The house will be fully renovated (69%)
3. Helps protect nature and the environment (36%)

Overall, the respondents seem supportive of the renovation and eager to find out more about the SmartEnCity project (86%). This shows a high interest from the target group to participate in the planned SmartEnCity communication and engagement activities.



Citizen Engagement Working group

Is included in this Key Area because it works directly with other partners in order to achieve the engagement goals. For more information look at the Governance Key Area.

Other Stakeholders

They help with engagement and communication processes:

- Telia (education on smart home system, implementation of the platform)
- The Estonian Green Movement (which is located in the pilot area)
- KredEx financing institution (offers additional financial support for the housing associations)
- Building associations (free-form bodies that consist of representatives from each apartment and that make decisions for the building with the majority vote)
- Other local associations, unions and bodies

House Associations-Holding Companies

Pilot area housing associations are included in the project. Usually, each house has one association. However, approximately half of the houses in the pilot area are managed by holding companies. Each housing association is a separate entity. The logic of the operation of Estonian Housing Associations is available here⁴¹

Most houses are represented by their corresponding housing association and some houses are managed by holding companies (who act as housing associations in this case by making decisions for the house). The sizes of the houses vary – some houses have 4 or 5 stories with 2 to 4 sections. As such, the exact number of apartments/apartment owners per house varies with each individual house.

Housing Associations communicate information to the people in their house and make the ultimate decision of whether to join the renovation project.

The houses that cannot afford the refurbishment or are not interested in it are determined via a majority vote – if the building association votes against renovation, these houses will not be moving forward in the process. Please see also *What Value Proposition* section for the renovation financing model. However, SmartEnCity is keen to involve all pilot area residents and general public into several wider citizen engagement activities (change in general behaviour and mind-set of energy efficiency and sustainable smart living) and education programmes that will be developed during the project.

⁴¹ <http://ekyl.ee/organisation/housing-cooperatives-in-estonia/?lang=en>

Lead users

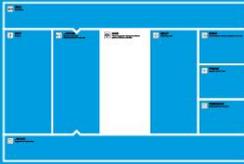
As we will see in more detail in the What Value Proposition Key Area one aspect of the engagement strategy is that the citizens of the pilot area will learn how to use the new smart home tools and reduce their consumption. For that, they will recruit influential spokespeople or lead users to get involved, i.e. people of renovated houses who have learned how to use the solutions and want to “spread the word” – these people will not only lead by example but they will also informally start to educate others on the new technologies.

The overall concept of education program or involvement strategy of users/active community leaders/participants will be soon described, more detailed information (specific activities) will be decided in the strategy working group.



HOW

Citizen Engagement Strategies definition and Best Practises collection



In Tartu Lighthouse Citizen Engagement Strategy main steps from the graph below to focus on have been mostly on “Inform”, “Consult” and “Involve” (IAP2 Public Participation Spectrum). The project has less room for direct collaboration in designing solutions and in empowerment, however, one strategy through the project and in proactively engaging the target groups is to provide educative programme for them in order to ultimately create a smart community who will be more intensively collaborated and empowered in future smart Tartu development. Still, more “collaboration” and “empowerment” are envisaged in deciding some details in the planned solutions – e.g. choosing art compositions for the renovated houses, favouring elements in the smart home system, participative public transport app etc.

In addition, there is a target group engaging educative programme in order to ultimately create a smart community who will be collaborated and empowered in future smart Tartu development.

For Tartu, mutual learning together with the citizens is a major aspect of our Communication and Engagement strategy. The value proposition and learning process for the citizens follows the matrix:



* This communication may and will involve both peer-to-peer studying (current users of the technology will simultaneously promote and encourage other users to adapt to the technology as well), so-called vision building (communicating the benefits and futuristic possibilities of smart cities and the specific technologies used), recruiting influential spokespeople, etc.



Tartu's strategy has been to promote the project as a unique, rare and extremely beneficial opportunity for renovating your house. Tartu's Value Proposition includes:

- Your life quality and comfort will increase
- Your electricity and household bills will reduce
- The value of the property will increase
- It will be very good for the environment

Price

Final price will be determined by the cost of the technical consultant, technical designer and the construction company. A procurement process will determine the final cost of the overall refurbishment action. As all pilot area houses differ (number of apartments, and some houses are already partially renovated), it is not possible to give a standard general cost.

The detailed cost of the energy system renovation will be included in the overall renovation cost which is determined during procurements.

Financing

The house owners need to cover the own financing, which is approximately 20% of the total renovation cost. Pilot area residents are aware of this arrangement. The 20% might be quite a small sum for some buildings that have already renovated their house to some extent, but may be more considerable for owners who have not done any refurbishing in the last decades. The exact amount depends on the total cost of renovation.

In Tartu, the financing for the renovation comes from the combination of three sources:

SmartEnCity grant (102 eur/m²) + KredEx grant + own financing (bank loan)

As such, house owners need to only cover a fraction of the cost. As no housing association has these amounts of money available, houses will need to take out additional loans to cover own financing, and they will pay them back at conditions negotiated with the bank. No additional funding or support schemes are foreseen.

The grant amount is fixed at 102 EUR/m² of the closed net area of the house. This does not fluctuate. As such, smaller buildings with less net area will receive less funding than larger houses.

The average heating consumption of a house per year in heating is around 170 kWh/m².

Payback

It has been calculated that they will save approximately 80% on their heating bills. The investment will be returned within 7 to 10 years, but this is very dependent on the specific apartment and its habitants' behavior. Specific calculations on this are still pending.

Learning

For Tartu, major emphasis is also on learning, i.e. changing the existing socioeconomic practices. This requires concentrated effort from all stakeholders as people must be taught how to adapt to and use the new technologies – Tartu wants to transition into a smart city, the key part of which is learning, and not merely implement new policies and technologies.

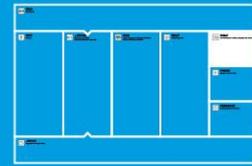
Citizens and developers will learn how to use and create the new smart home tools and reduce their consumption.





WHAT

Communication: Activities, Materials and Channels



As Estonia is a very internet-centered and e-solution driven country, most of Tartu LH materials, including written and visual, are published online. So far, information is mostly distributed through:

- www.tarktartu.ee website – this includes news about upcoming events, a FAQ section and a forum
- www.tartu.ee website – news bulletins and press releases
- <https://www.facebook.com/tarktartu/> Facebook page – to engage both pilot area and Tartu citizens in the topic of smart cities and smart solutions
- the SmartEnCity/Smart Tartu mailing list – detailing upcoming events and offering information about the project and its activities

Events

- House Associations meeting (May 10, 2016) – participants were pilot area citizens, city officials, technical consultants and designers, project partners, general public
- Participating in individual House Association meetings (ca 15 meetings so far, each with 15-30 participants)
- Regular meetings with KredEx regarding the co-financing of the refurbishment activities
- Regular meetings with technical consultants, designers and builders
- 1 November 2016: Technical panel with technical consultants and designers
- November/December 2016: General assembly meeting with pilot area residents to discuss their progress so far and address any and all concerns
- 13 December 2016: Technical panel with technical consultants and designers
- Lecture series on “Developing and building a resource-efficient city” will continue with regular lecturers featuring several guest speakers
- 31 January 2017: public information event about the status of the project and an invitation to continue direct communication with the pilot area residents. Several round tables are open for the pilot area residents in order to involve them more into SmartEnCity project.
- Informal “tea evenings” for pilot area residents to discuss their concerns and speak honestly and openly in a relaxed environment

The engagement working group continues work on engagement activities, organizing events and producing materials. We have produced a strategy outline and are working towards its realization.



Leaflets and flyers

- Project flyers in all pilot area mailboxes, both in Estonian and Russian (May 23, 2016)
- Notification posters of the House Association meeting in all pilot area building hallways

Presentations

- Presentations produced by local partners that include information about SmartEnCity
- Lecture series on “Developing and building a resource-efficient city” hosted by the University of Tartu will include presentations by all speakers (first lecture event: <https://www.facebook.com/events/568226770030904/>)

Calendarisation

The first leaflet and poster was developed to a) inform the pilot area citizens about the project and b) to invite them to the general housing association assembly. For the second step, information points were set up online (see previous point) and a preliminary questionnaire was disseminated among pilot area residents to gain a better understanding of the demographic and their motivations regarding the renovation activities. Panels, leaflets etc. will be continually produced throughout the project to offer citizens objective and relevant information.

Channels to invite Citizens

The Smart Tartu mailing list mainly informs people of the pilot area. The Facebook page, tartartu.ee page and the city webpage are used to engage the general public as well. In case participation is very necessary, partners will also phone House Associations directly and inform them of the meetings/events.

Communication Criteria

Our main criteria of communication are:

- Information needs to be objective, balanced and easy to follow
- The messages we are disseminating need to be coherent, use the same language and terminology
- Information needs to be easily available (including in Russian and English as well) and communication channels need to be open and diverse
- Technical details need to be made understandable to everyone





Physical

There is no specifically designated place but people can always make appointments and visit the Tartu City government office or TREA office. Otherwise, most communication is conducted via email and telephone and through participation in housing association meetings.

The venues differ depending on the purpose of the meeting and the number of attendees. Individual housing association meetings take place in the houses, but larger meetings and panels have been held in the Tartu University Library, for example.

Online

Our online resources offer plenty of opportunities to find answers to questions and/or contact information of both Mr Tamm and TREA representatives for any additional questions or concerns.

Demo house

We had plans for turning *Lutsu 16* into a demo building (this building is outside the demo area and exceptional in this case) – the EC has not yet confirmed that this is an acceptable activity line but it is what we wish.

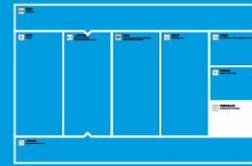
Platform and Smart meters

Installation will be carried out within the refurbishing project, building by building. All buildings will follow the same pattern - installation, testing and then they are automatically connected to the application (the specifics of which are still being drafted). There will be around 800-900 apartments involved in the project - all of them will get smart metering.



FEEDBACK

Reshaping Value Proposition



Pilot area residents in Tartu have different channels to give feedback for the SmartEnCity management team: local project website tarktartu.ee has a specific section for feedback and forum, local Facebook page Tark Tartu/Smart Tartu and direct contacts with the project manager and experts are distributed widely. On 31. January 2017 11 residents are invited to the open public event to talk about the project, ask questions and discuss along. All feedback will be constantly discussed in steering group meetings and if necessary, the Value Proposition will be changed accordingly. So far there have been no justified reason to make bigger changes in the current Value Proposition.

6.2.2 Sonderborg Citizen Engagement Strategy and Deployment Plan

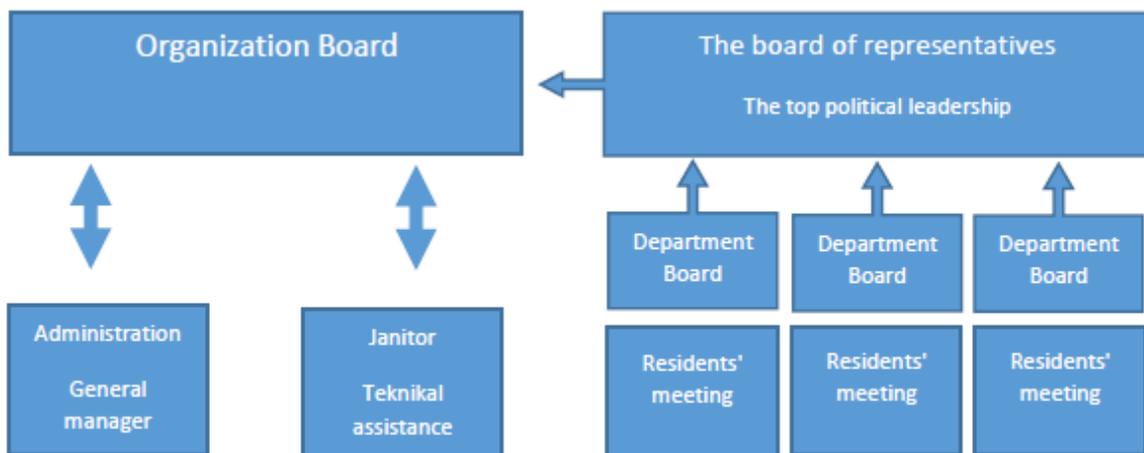


Steering Committee:

ProjectZero and the General managers of the House Associations SØBO,SAB, B42.

The Citizen Engagement Strategy is aligned with the tenants and also their representative boards. The final decision of the renovation plan will be taken by the tenants living in the associated building block. The General Manager signs the refurbishment contract on behalf the tenants. In order for the refurbishment project to succeed the tenant have to vote yes for on their annual resident meeting.

Organisational scheme:





Sonderborg Municipality has as an official strategy to become a ZEROcarbon-emission community in 2029 with respect of all activities with in the municipality area.

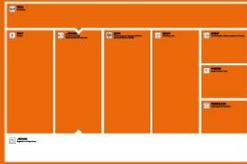
At first, it is very important that the House Association accept that the goal for energy reduction is necessary. The Housing Association must work for this vision in their management of their organisations, because housing associations are regulated during Danish legislation, and there is a public financing of building houses.

In the society of Sonderborg, the Housing Association have a great part of the living houses, between 25-35 %. What the House Associations do about building renovation and engaging the tenants in being aware of their behaviour in relation to use of energy will have influence to other citizens of Sonderborg.



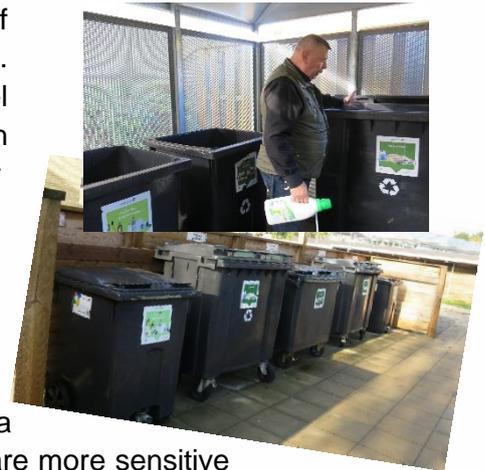
TO WHOM

Segments and Target Group



The socioeconomic characteristics for the different Housing associations areas are very similar.

There is generally a high interest for the environment 78% of the residents says they are very environmentally aware. What is important to know is that there already is a high level of waste recycle in the housing association. So the high environmental awareness it not necessary an indicator for the will and knowledge for making change whit in the SmartEnCity scope.



Furthermore, there is an economical challenge because there is a higher rate of unemployed and pensioners among the residents. The house income is typically 40% under an average family in DK this means that there is a higher focus on the price vs sustainability and the families are more sensitive to a higher rent.

The typically get their news and info from local medias and tend to be more skeptical for the use of a pc.



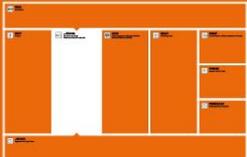
There also is a higher concentration of foreign nationality people in the area so there is a broader representation of cultures. This can also be a challenge in the communication. We can't be sure that all of them speak and read Danish.

House Associations:

- | | | |
|----------------|------------------------|--|
| • SAB | 3400 apartments | 422 apartments are scheduled to be refurbished |
| • B42 | 2000 apartments | 297 apartments are scheduled to be refurbished |
| • SØBO | 1669 apartments | 88 apartments are scheduled to be refurbished |
| • Total | 7069 apartments | 807 apartments to be refurbished |

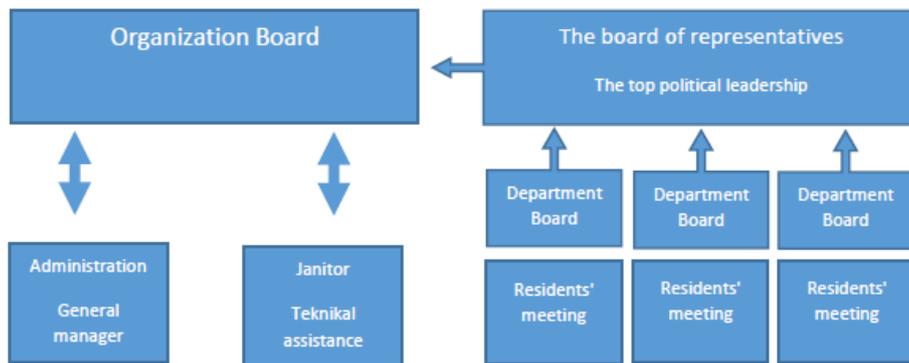


WITH WHOM
Key Actors and Roles
Formal and Informal Leadership



Project Zero: is a formal leader which defines its role as Catalyst

House Associations: each Association has a General Manager who signs the Refurbishing Contract on behalf the tenants. More details in Target Group Area. This are formal leaders.



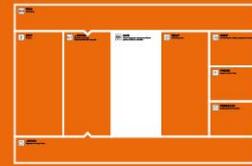
Department Boards: the representatives depending the House Association. The representatives are formal leaders.

Tenants: They can play the informal leader role for example participating in the Family program and then spreading the learnings to other tenants or citizens of Sonderborg.



HOW

Citizen Engagement Strategies definition
and Best Practises collection



ProjectZero developed and ad hoc 4 step strategy:

Step one:

The goal

- To build a confidential cooperation between ProjectZero and the general managers of the housing associations.

Discussions in the partnership citizen engagement, that is ProjectZero, the general managers from the housing associations and the consulting engineer (and SmartEnCity partner) *Torben Esbensen* who is associated with the renovation projects.

Develop a program for workshops in a cooperation between the ProjectZero secretariat and students from the university in Sonderborg.

Step two:

The goal

- To prepare a team that will secure strong future contact to the tenants.
- In cooperation with the team make a program for citizen engagement, as described in step three.

The general manager in the three housing associations take contact to the the department boards.

In the partnership "citizen engagement" (check step one) the general manager in each of the three housing associations takes contact to two departments boards.

So six departments boards are contacted and the ProjectZero secretariat invite each department board for a workshop (check step one) to prepare them as a team for the contact to the tenants.

Each team must take contact to 5 families. One family can be 1-2 adults with or without children.

Step three:

The goal

- Involving 30 families to be aware of their behaviour in relation to use of energy.
- To build up a basic for cooperation between the families.
- To find new key persons for the project further on.

5 meetings with the 30 families all together at the same time.

A first meeting consisting of a workshop about the future plans.

Next meetings consisting of an excursion to a treatment plant, incinerator or geothermal plant. At the different locations information and discussions about waste water, energy that is power electricity and heat, transport... How to measure their own use of water and energy, data collection, method for cooperation with another family. Time schedule for the next year.

Step four:

The goal

- Start the citizen engagement in the rest of the departments in the involved housing associations
- Involving the rest of the Housing associations that aren't involved in SmartEnCity. In order to start citizen engagement
- Getting all the housing association to make a green strategy involving the following ones:
 - Energy management
 - Citizen engagement
 - Buying policy / demand to suppliers
 - Retrofitting policy

In order to succeed with the vision of the city council getting CO₂ neutral by 2029.

- Identifying new departments in the six housing Associations in Sonderborg municipality to start retrofitting based on the learning from SmartEnCity.

We will use the experience that we gain from the 30 families to make a program that the housing associations can use to start a similar process in other departments.

Start the dialog whit the House Association board to implement a green strategy. It is the board who has to present it for the board of representative one there annual meeting.

Get the general managers to find the next departments that are similar to the SmartEnCity and contact the board of residents.

Scaling up

The plan is to use the learning from the 30 families when we scale up the process. Therefore the plan will first be made from May 2017 to July 2017 so that we can launch in August/September 2017.

It is very important for us that we have that learning period it will make our attempt later on more qualified and increase the rate of success.





The proposition is divided in two target groups, the House Association and the Tenants.

House Association:

It is very important that they accept that the goal for energy reduction is necessary. The next step is that they implement an energy strategy and energy management plan in their own administration.

The value-proposition for the Housing Associations regarding the refurbishment is learning about which solutions are profitable, even though they are non-profit companies they are obligated to provide the cheapest rent for an apartment as possible.

Furthermore, they can use this project as catalysts to make more citizen engagement for the political structure.

Tenants (30 lead user families):

- Learning about good electrical behaviour - thereby saving money on the electrical bill
- How to heat and ventilate your apartment - increase comfort by the right heating behaviour
- Introduction to car sharing

During the project we will evaluate if this is the right value-proposition to make citizen engagement so that we can change the method if necessary. Further more we will use the feedback from the families to make a model to scale up the project.

Monitoring:

A part of the refurbishment program is to install monitoring equipment in the apartment that will allow the lead users to monitor their energy consumption. The average consumption reduction is 1.000 kWh per year per family in electricity and 2.500 kWh per year in heating.

Information about Prices and product characteristics:

It is not yet decided yet.

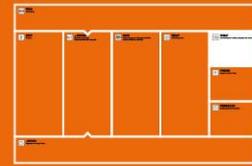
Payback:

The rent increase will be compensated in through the reduction of the heating consumption in about 12 years.



WHAT

Communication: Activities, Materials and Channels



November 2016	Meeting with the advisory board
November 2016	Workshops with the rest of the department boards
December 2016	The initial meeting with 30 interested families check 3.2.
December 2016	Meeting with the General Managers from the housing associations together with ProjectZero and the consulting engineer about evaluation and plans for 2017.

Until now we haven't developed leaflets or panels. With a more directly and personal communication, we try to avoid misunderstandings and to build up a confidential relation.

The administration at the housing associations contact the tenants during letters at their website or information in the stairwells. The members in the department boards take contact with the tenants too. The discussions and meetings between ProjectZero, the General Manager, the Department Boards have been face to face, by mobile or emails.

We are developing a **communication plan** on how we will reach out to persons of interest.

They are divided in to 3 segments:

- **The tenants in the department that are refurbish:** we will develop a platform where they can rapport their energy consumption and thereby monitor their energy saving over the project period. To support communication between the family's involved in the project we will use Facebook to create a forum where they can discuss and exchange ideas.
- **The rest of the House Associations:** news in collaboration whit local medias about the project families. All the learning from the families will be made into a flyer/book available for the rest off the House Associations.
- **The municipality:** the project whit the 30 families will generate 5 energy ambassadors. They will be used to showcase to a tenant the possibilities reduce their energy consumption. News will be published in collaboration with local medias. All the learning from the families will be made into at flyer/book that will be made available for the rest off the municipality.

It is important that we also involve the rest of the residents in the project. For this we will develop leaflets and use our existing webpage to distribute information about the project.

The annual Resident meeting is also an important event that we will use to inform the rest of the residents about the learning from the project.



Rooms:

It is common in Denmark that each housing association has rooms that the tenants use for family events like birthdays or weddings. The rooms can be used for meetings for all the tenants in a department/section and for the department boards.

Smart meters installation:

- 4 units in SOEBO,
- 19 in SAB,
- 20 in B42 Housing Association

Lead user platform:

For the tenant involved in the project, we will develop a platform where they can report their energy consumption and thereby monitor their energy saving over the project period.

To support communication between the family's involved in the project, we will use Facebook to create a forum where they can discuss and exchange ideas.

We expect that the web shall be used e.g. in relation to the many data from citizen's registrations. We also expect that the web will be used as information repository about the process. Maybe we would like to have the process at Facebook.

ProjectZero Web:

It is important that we also involve the rest of the residents in the project. For this we will develop leaflets and use our existing webpage to distribute information about the project. The annual Resident meeting is also a platform we will use to inform the rest of the residents about the learning from the project.

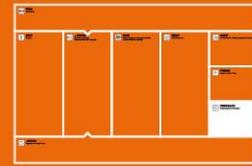
1st Pilot House as showroom for each House Association:

There is no demo building, only drawings.



FEEDBACK

Reshaping Value Proposition



In case of the value-proposition for the 30 family's we will focus on these:

- Learning about good electrical behaviour - thereby saving money on the electrical bill
- How to heat and ventilate your apartment - increase comfort by the right heating behaviour
- Introduction to car sharing

During the project we will evaluate if this is the right value-proposition to make citizen engagement so that we can change the method if necessary. Further more we will use the feedback from the families to design a model to be use when we scale the project up.

We will use the experience that we gain from the 30 families to make a program that the housing associations can use to start a similar process in other departments.

6.2.3 Vitoria-Gasteiz Citizen Engagement Strategy and Deployment Plan



Coronación Steering Committee (CSC)

In the case of Vitoria–Gasteiz’s Lighthouse Project, a local Steering Committee was established before the “kick-off” of the SmartEnCity project, in order to guarantee a smooth and efficient start. This core team, is meeting periodically every 15 days since January 2016. Seven partners are participating on those periodic meetings:

- VIS
- TEC (also representing ACC until October 2016)
- AVG/CEA
- MON representing (ETIC, LKS, MTEL, MU, FED)
- GIR
- CEE/H-ENEA

Visesa leads the meeting in collaboration with Vitoria-Gasteiz Municipality and Tecnalia as project coordinator. All above mentioned stakeholders analyze, discuss and decide on alternatives to be presented to the General Management Board. Finally, definitive decisions are validated by both the General Management Board of Visesa and the General Manager of Urbanism Department of Vitoria-Gasteiz Municipality. At a time, Tecnalia is in charge of safeguarding the compromises acquired with the European Commission and to offer solutions and bridges for enabling action due to its role as Project Manager.

In Smart City projects, interdisciplinary cooperation becomes crucial on daily workflow. There is a need of understanding between the different disciplines involved: edification, urbanism, ICTs, energy, mobility, citizen engagement, etc. In SmartEnCity case, and more precisely in Vitoria-Gasteiz’s Lighthouse Project, the profile of the participating agents in the management board is multidisciplinary, with a clear predomination of engineers and architects.

Communication and Citizen Engagement Committee (CCPC)

This Committee was created within the governance structure of the Vitoria-Gasteiz’s Lighthouse Project, in order to promote and guarantee the Community involvement and citizen engagement. This issue is especially relevant in this kind of projects due to the nature of building retrofitting interventions. The interventions are held mostly in housing and, depending on property structures, resident’s opinion and implication might be decisive. In the case of Spain, if the residents of the building do not mostly agree with the intervention, this might be an insurmountable barrier for the action.

This committee is meeting periodically since March 2016. Three partners are participating on those periodic meetings:

- VIS
- AVG/CEA
- CEE/H-ENEA





Vitoria-Gasteiz advocates transforming the city into environmental issues and promoting the transition from the European Green City to the **CO₂ neutral city**.

In addition, Vitoria-Gasteiz aims to renovate various neighborhoods of the city. For this, the district of Coronation is a **first pilot**:

- Reduce the energy demand of the neighborhood and the use of renewable energy in substitution of fossil fuels.
- Improve housing habitability and improve comfort.
- Save on heating and domestic hot water (DHW).
- Integrate the participation of neighbors in the definition of the project.
- Sustainable urban mobility.

Additionally Vitoria-Gasteiz LH's goals are:

- Demonstrate technologies and concepts to progress towards zero carbon cities.
- Involving the citizens in the process and creating job opportunities.
- Facilitate future replication projects by showing successful implementations and business models.

During the first months of the project, the strategy has been focused on District Renovation intervention, based on Building retrofitting and Integrated infrastructures.



Citizen Engagement on District Renovation Intervention Engagement process will be determined by its district characteristics. The Coronacion District has 6.066 houses and is one of the first labourer neighbourhoods developed in the sixties in the city of Vitoria-Gasteiz.

The buildings were made between the sixties and seventies and observing the maps, no urban changes happened in the neighbourhood since 1960.

The Coronacion houses building model was created to attend the territorial working class immigration during the sixties economic explosion.

Houses are aging: more than the 80% of the buildings are more than 60 years old (only the 20% of the houses of Vitoria-Gasteiz was built before the 70's).

People is aging: 32% of the population is 65 years old or older (the media is 20% in the rest of the city).

Enclose demographic structure datas of the District.

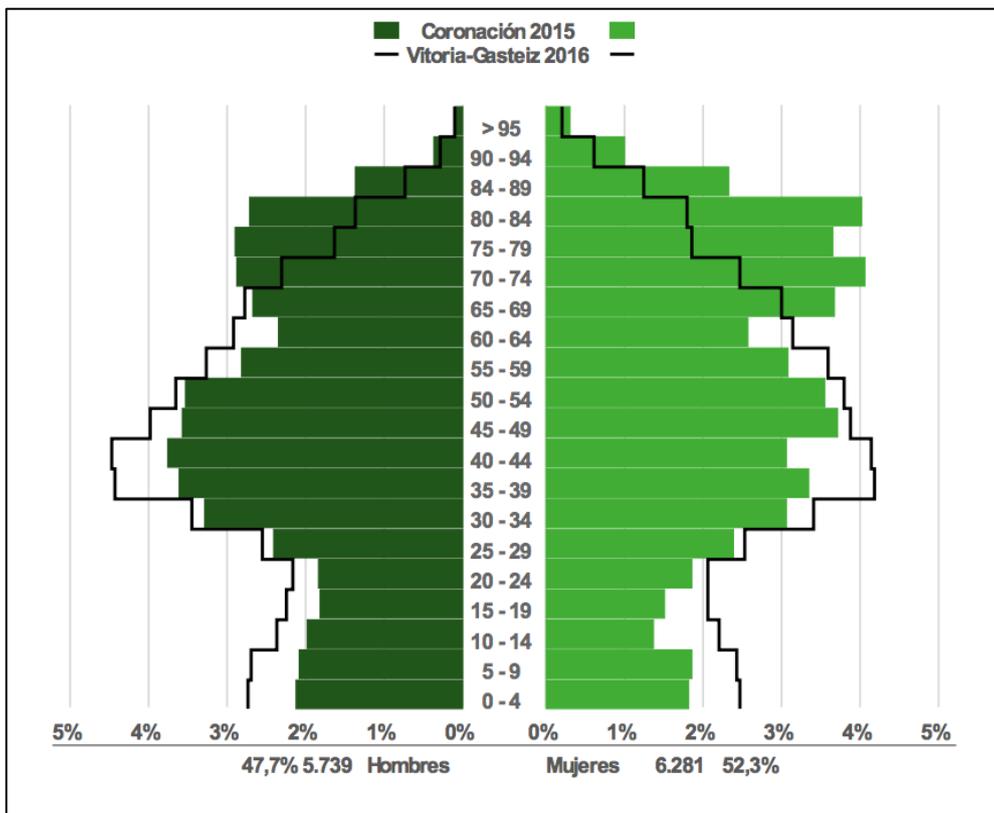


Figure 12: Vitoria-Gasteiz Municipality 2016 demographic structure

Vitoria-Gasteiz has 276,80 km² and a density of 820,78 per hab/km²

Coronacion neighbourhood is the one with the **highest density per km²** (more than 40.000 habitants per km², the average in Vitoria-Gasteiz is 885 habitants per km²).

The 16,4% of the population is foreign nationality and the average of foreign population in other neighbourhoods is 8,8%.

Aging, immigration and old houses with a compacted non-refurbished houses framework explains the lack of attention for new incomers.

In the following image, we can see the small percentage of buildings that were built after the seventies.

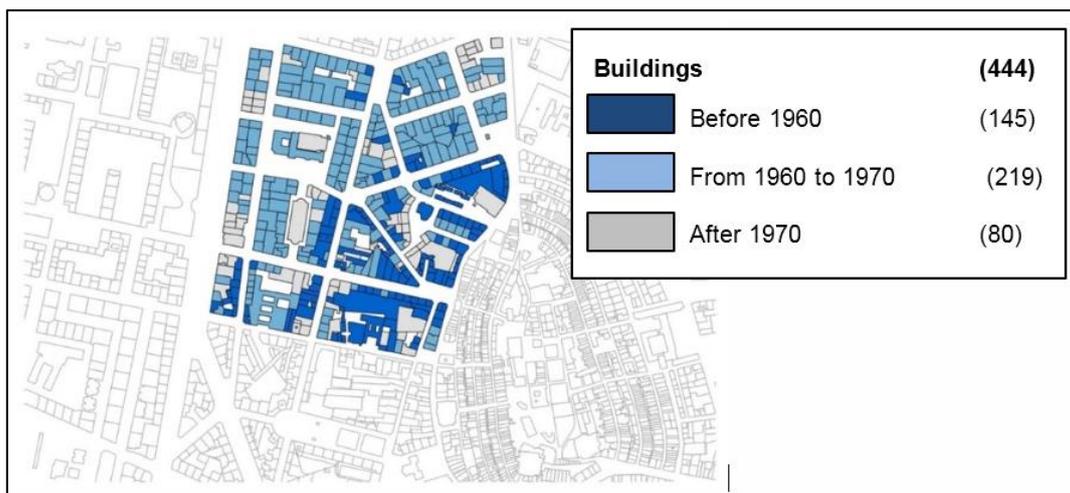


Figure 13: District of Coronación and when the buildings were made

It has the amount of 2.444 habitants (data source is the municipal register of habitants). One of the most vulnerable collectives is the old population. The 24% from the population is more than 65 years old, which supposes that 1 of 4 habitants is older than 65 years old.

About the relation between buildings and population total amount of buildings in the intervention zone are 108 buildings. In 48 of the buildings the population is older than 65 years old, and in 11 of them, this collective represents more than the 50%.

Regarding relation in between buildings and foreign nationality people, 6 buildings have more than 55% and 22 have in between 30 and 55%.

In the case of Vitoria-Gasteiz, the refurbishing will be offered to private owners. The owners are the ones that are making the investment for the refurbish.

In the case of the clean energy proposal, District Heating the investment will be done by Basque Government. The refurbishing customer contract include also the obligation of consuming hot water of district heating.

About the relation between buildings total amount of buildings in the intervention zone is 108 buildings. In each building there are in between 4 and 48 apartments. Each building can have several community property of owners. Each community unity of owners is composted from 4 to 12 apartments. The total of dwellings is 1305.

Decision makers are owners and the 60% of the owners community should say yes (a three fifths majority) in order to get the order confirmation for the refurbish.



1st step: due to the lack of a House Association in the process, in the case of Vitoria-Gasteiz the Key Actors are roles change during the process. This means that while the Citizen Engagement Strategy progresses with the time the Stakeholders change. From Vitoria-Gasteiz,s Governance point of view, the lack of clear concentration nodes in the process, as said the House Association or even a Administration Company that manages more than one building supposes a very big dispersion for the dissemination.

This is the reason why during the first phase of the strategy, which has been deployed during the 2016, the basis has been to make a dissemination based on the Neighbourhood existing association network and existing public services.

The proposed Pre-Stakeholder Map or list of entities with the selection reasons remains as follows.

1. Visesa
2. Tecnalía
3. Vitoria-Gasteiz municipality/CEA
4. Tecnalía/ European Union Horizon 2020
5. MONDRAGON (ETIC, LKS Ingeniería, MCCtelecom, MU, Fagor Ederlan)
6. Veolia
7. ACEDE / H-Enea Living Lab
8. Neighbours associations: Errota Zaharra and Bizilagun
9. Aprejua Association
10. Nagusilan Association
11. Coronacion Church. There is a neighbourhood with a high quantity of aged people that assists to this church. Their collaboration can also be useful.
12. Mosque Coordinator. In the neighbourhood, there is also a part of people that assists to mosque their collaboration is also needed specially to be able to adapt the message to their language.
13. Health Centre. People from the neighbourhood assists periodically to the centre being in contact with the professionals that work there. People trusts in these professionals. They can also work as node.
14. Older people Sociocultural Centre. Meeting point for many people from the intervention, the Service Desk from the Centre could be used for project information delivery.
15. Ekologistak Martxan and Gaden Association. Their voice can be useful for the project dissemination in the media. They usually participate in the Municipal Organ.
16. Foreign people Collectives: a part of the neighbourhood comes from foreign countries. Is important to ensure they will be informed too.
17. Commercial Associations: SEA Catering Association and Gasteiz On Association.
18. During the contact with the above-mentioned organisations, potential new contacts can emerge.

The connection to this existing Neighbourhood are Networks and the cooperation of the Governance Teams in the Communication Deployment increased the fiability of the message.

December 2016, Vitoria-Gasteiz was re-adapting the strategy for the next step which is involving the Neighbours in the Refurbishing Value Proposal. **2nd step** needs the Alliance of new Key Agents that can help in what we call the pre-commercial process. The pre-commercial process consists on contacting the Pilot Area focused residents with most of the information of the Value Proposal but not all. This means the product (refurbish) service (energy) aspects are not 100 defined but you start to share some information while you also make some questions that help to define the product costs better.

After some Best Practice cases studies and interviews, the actual decision is that a new incomer will join in in the Citizen Engagement Team, this is **Ensanche 21**, the Vitoria-Gasteiz Municipality Old Urban Area Refurbish Office team. Its office is located near the Pilot Area. The Vitoria-Gasteiz Lighthouse promoter already interviewed the 100% of the building block community representatives in ordeR to get the information about the real dimension of the houses (which are not similar in the same building block) and also the motivations of the people. The meetings are taking place in the Ensanche 21 office.

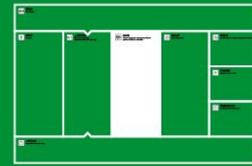
All the Key Actors mentioned till now are formal leaders. About the

The next step, **3rd step**, is to attract a small number of lead users, 15 people, that could help to engage more and attract more interested people in the value proposal. The 15 people will take part in a programm that is not fully designed and agreed yet. The Promoter Group is thinking about including educational aspects related to energy savings in the program. The **4th step** consists on spreading the experience fo the 15 lead users to other people of the target group which will be named as followers.



HOW

Citizen Engagement Strategies definition
and Best Practises collection



In the case of Vitoria-Gasteiz the process consists on increasing the level of impact of the citizens in the proposal. As you know we started with the Information Strategy, followed with a Consultation for the District Renovation and now we are pivoting to the Involve phase.

The strategy has little to do with what was initially planned the target people, house owners, in the case of Vitoria-Gasteiz, must be more empowered and involved. Informal leaders must be detected and a leader group created. There is a difference in between the informal leaders and formal leaders. The roles of the Stakeholders and Citizen Engagers must be clearly defined before starting the process.

As you can see in the Stakeholder Map, the Neighbourhood Associations are invited by letter and phone to a meeting asking them to introduce the SmartEnCity in the District. The second step was to invite the Neighbourhood through door to door invitations.

When the target group, residents, increased their information around the project the strategy change. Visesa organised an exhibition in which the house owners can see the Refurbishing Typologies depending on the initial Building characteristics. They also specify how the connection to the District Heating will take place.

The next step is to analyse how and when is the correct moment to share the Refurbishing offer with the Neighbours. The 108 community of owners have been contacted and a strategy of engagement has been designed meanwhile. The first round of meetings with the 108 communities is finalizing. Visesa supported by Ensanche 21 (part of the municipality of Vitoria-Gasteiz) is giving more concrete information about the building retrofitting features.

Lead user acquisition strategy:

The possibility to start refurbishing one building to show it to the rest of the Neighbourhood is in mind of the Promoter Team but it has to be validated and it depends on other decisions. Best practices on Citizen Engagement in the Cases with no House Association like Vitoria-Gasteiz are being analysed. Based on that, alternatives on Strategies to concentrate the Neighbourhood participation will be designed and validated. In any case, the people that would represent Neighbourhood Groups wouldn't be officially elected, it would be more a "lead user promoter group"

Visesa detected some potential lead users, the lead promoter group was not created yet, remember that the number of houses is 1.313. For cases in which the number of houses is so high the creation of more "lead user promoter group" is recommended. This part is being discussed internally.

Experienced Citizen Engagers recommend to detect the cases during the process after creating the lead user promoter group/groups.

Lead users will be offered some workshops where they can learn from experiences from other renovation projects, and be given the opportunity to visit the projects.

All participants will have energy and comfort sensors installed in their dwellings and they will be trained on their use.



In the case of Vitoria-Gasteiz, the highlight of the project is the refurbishing. The interventions will consist in the envelope refurbishing, which involves the intervention in the façade and cover, the installation of the external carpentry and the filtration reduction. Additionally, a 50% energy consumption reduction will be promoted as well as the adaptation of the houses to a high efficiency Biomass heat district will be performed. The system will feed the houses with heating and hot water. Furthermore, clean energy use will be promoted in the City, as well as information technologies use to add integration and coherence to the project.

The plan consists in the installation of a District Heating that operates with biomass with the capacity of feeding 1.300 houses. The European Project finances 750 houses. The intervention will take place in a concrete area of neighbourhood that extends to 1.800 houses (from the total 6.066).

Products:

- Deep renovation interventions in districts which includes insulation, new low energy windows and doors, installation of ventilation systems with heat recovery, among other measures which will significantly drop the energy demand of buildings.
- In addition, each city will maximize the use of local Renewable Energy Sources (RES) for the electric grids and thermal networks through the installation or the upgrading of district heating and cooling networks.
- Communication Technologies (ICT) and monitoring solutions, will be implemented in the demo areas of the three cities. Thus, it will optimize the operation of energy units, increasing smart grid connectivity and resulting in a higher energy efficiency of these energy systems.

Economic:

The proposed cost is 21.000 EUR on average, connection to the District Heating included. There are some buildings where the costs are higher because of its initial characteristics (more complex interventions due to existing walls). The final price for the house owners, after discounting the EU commission, Basque Government and Vitoria-Gasteiz Municipality grants, is 9.600,00 EUR on average.

The Basque Government and Vitoria-Gasteiz Municipality will create guarantee fund for those who can not afford the 9.600,00 EUR investment.

The current heating and hot water costs per house are estimated on 600 EUR/year on average, corresponding to about 5,000 kWh for space heating and 1,300 kWh for hot water. In the case of Vitoria-Gasteiz, as part of the intervention, the neighbours must change from individual heating systems to the district heating system.

The business model of the energy service provider for the district heating is not fully defined yet. Anyhow, Vitoria-Gasteiz City Council is considering the possibility to be a partner of a public-private society that will be created for that purpose and service.



Payback:

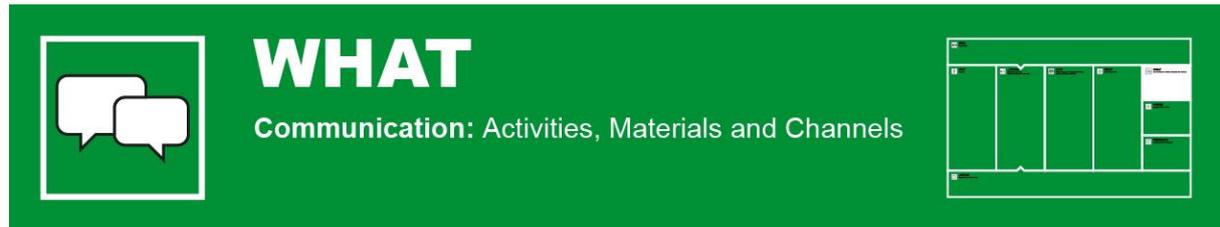
The payback period for the intervention, purely based on recovering the investment from the savings on the operation and taxes on the buildings, is about 30 years.

Additional benefits to the building, which are not included in this calculation, are for example, the increased value on the property or the health and comfort benefit for the occupiers.

Conditions:

The District Renovation plan consist in the installation of a District Heating that operates with biomass with the capacity of feeding 1.313 houses. The European Project finances 750 houses.





Communication must be easy to understand. Technical complex information, that comes from Project Management team, must be curated to be ready to use by the Citizens involved. Moreover, neighbourhood socioeconomic information is useful to design information contents per it.

Events:

Date	With Whom	Assistants	Type of event
12 th April 2016	Associations in the neighbourhood	20 associations	SmartEnCity General information
18 th April 2016	Homeowners	350 owners	SmartEnCity General information
26 th May 2016	Associations in the neighbourhood	5 associations	District Renovation information
21 th June 2016	Neighbourhood	175 neighbours	District Renovation information
12 th -24 th September 2016	Neighbourhood	250 neighbours 60 people taking part	District Renovation Consultations
6 th -23 th October 2016	Homeowners	200 owners	Exhibition of different refurbishing options
October 2016 February 2017	Community property of owners	108 communities	Informative meetings

Table 4: Events, number of assistants and event type

Leaflets:

- For the April 2016, General information event, 1 leaflet was uploaded in the web of the Municipality

Presentation:

- For the June 2016 Event, District Renovation information event

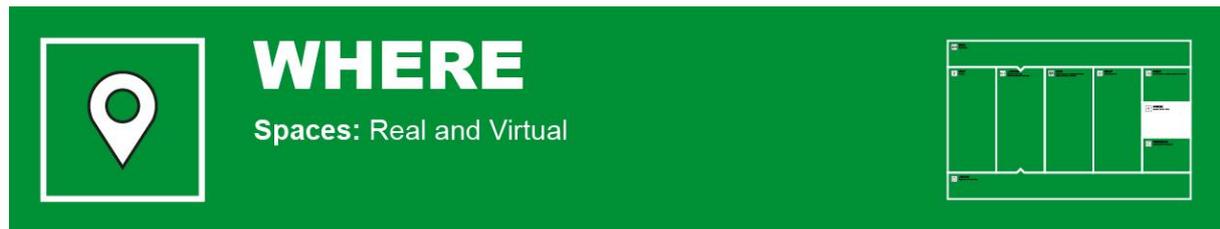
Panels:

- For the consultation exhibition on district renovation
- For 6 typologies of building retrofitting

Platform and Smartmeters:

Smartmeters will be installed in participant dwellings. Energy & comfort sensors will be installed in their dwellings and they will be trained on their use.





Online:

- **Vitoria-Gasteiz municipality web:** Now, the web page is the Vitoria-Gasteiz municipality page: www.vitoria-gasteiz.org
- **Visesa web:** Future information regarding house refurbishing could be uploaded to Visesa's Web. These aspects are under discussion.

Vitoria-Gasteiz Municipality Web is a touch point where the House Owners or their families (in case the house owners are older than 60 years old) can collect all the information of what is being shared with the Citizens during the project, including the leaflets that were delivered in the meetings.

Spaces:

- **Europa Palace:** Big Meetings (350) for hundreds took place
- **District Civic Centre:** Smaller ones (200) and Exhibition took place
- **Association house:** Meetings (40) with different associations of district took place
- **Citizen Office:** Meetings (20) with neighbours took place. An office from the municipality mentioned in the Key Area With Whom, named Ensanche 21 and located very near the District centre, attends since November 2016, the owners requests. Meetings with owners (max 15 people) are also taking place here.

Demo Building:

There are no specific incentives at the moment for a demo building.

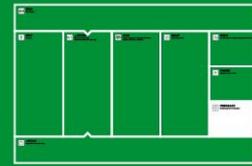
Houses-Smartmeters:

An average of 500 to 600 smartmeters will be installed.



FEEDBACK

Reshaping Value Proposition



- 18th April 2016: SmartEnCity General Information. Neighbours could ask questions about the project, solving some of the doubts
- 12th-24th September 2016 Exhibition for Citizen Consultation: Citizen could propose ideas or post complaints about District Renovation proposals.
- 6th-23th October 2016: Exhibition to show home owners different, refurbishing options depending the district house typology: The owners could express doubts about the building retrofitting project and resolve some doubts.
- October 2016 – February 2017: Meetings with community owners: Owners could know more concrete features about building retrofitting and ask relevant questions about the project.

6.3 Neighbourhood Organizational Systems in LH Cities

The aim of this section is to understand how each LH City neighbourhood organizational system works and operates in refurbishing decision making process. This section can be related to different Key Areas. Going back to the Key Areas specifications, this section analyses the Formal Leadership aspect in the Actors and Roles Key Area. This section can also help Follower Cities to understand which where the initial conditions of the process in each LH City.

6.3.1 Tartu case

Housing Association = Building associations:

All pilot area houses have Housing Associations that are made up of representatives/owners of each apartment in the building. Building associations are free-form bodies that consist of representatives from each apartment and that make decisions for the building with the majority vote. House Association of each house signs the contract with Tartu City (who in turns pays the construction company directly).

Each housing association is a separate entity and there is no common representative board for all pilot area houses. However, each housing association has its own representative board among the apartments. Building association consists of representatives from each apartment who are interested in the most economically viable and affordable solution and also in raising the price of the property and decreasing bills.

Housing Associations communicate information to the people in their house and make the ultimate decision of whether to join the renovation project.

Administrative Companies:

Administrative/holding companies have signed contracts with the housing association to manage certain services for them. The houses still have building associations but have delegated some of their responsibilities to the administrative company. Half of the houses in the pilot area are also managed by five different holding/administrative companies. Such administrative company usually manages several buildings at once and is interested in the most economically viable solutions.

Decision Making Process:

The majority vote⁴², i.e. minimum half of the apartment owners as well as half of the surface area of the apartments need to vote “yes” (it is important to note that apartment owners with large apartments have therefore more decisive weight).

The building association/housing association/housing cooperative votes on issues and the majority vote decides the outcome. Each housing association has also a statute that is signed by all apartment owners and that regulates the way the association votes and manages their day-to-day activities. There may be small differences between the statues of different associations depending on the needs of the owners.

⁴² <http://ekyl.ee/organisation/housing-cooperatives-in-estonia/?lang=en>



It is also important to note that in case of big important decisions (these are: 1. Founding a housing association, 2. Deciding on renovations, 3. Taking out large bank loans) sizes of apartments are taken into account as well – the votes of one-bedroom apartment owners cannot override those who have three or four bedroom apartments as they will be paying a larger proportion of future bank loans, etc. As such, a majority vote constitutes the majority of apartment owners plus the majority of the property, meaning the owners with bigger apartments have more weight to their decision.

Tenants:

Tenants usually pay rent directly to the owners of the apartments. If the apartment is owned by the municipality, for example, the tenant pays the municipality. However, in case of SmartEnCity project pilot area in Tartu, we probably will have no apartments owned by the municipality.

6.3.2 Sonderborg case

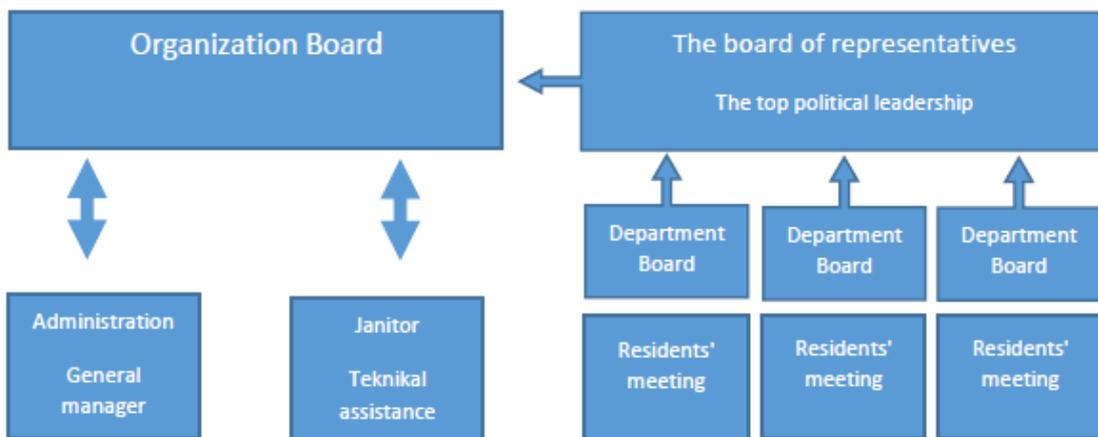
House Associations:

- | | | |
|----------------|------------------------|--|
| • SAB | 3400 apartments | 422 apartments are scheduled to be refurbished |
| • B42 | 2000 apartments | 297 apartments are scheduled to be refurbished |
| • SØBO | 1669 apartments | 88 apartments are scheduled to be refurbished |
| • Total | 7069 apartments | 807 apartments to be refurbished |

Number of Department Boards per Association:

- SAB: 45 department boards <http://www.sab-bolig.net/afdelinger>
- B42: 39 department boards <http://www.b42.dk/afdelinger>
- SØBO: 48 department boards <http://www.soebo.dk/boligafdelinger.html>

Organisational scheme:



The decision making process are similar in all the housing associations.

1. The Administration prepare a plan for the refurbishment and discuss it with the Department Board.
2. When they agree that the Administration gets offers from entrepreneurs and make a final proposal on a resident meeting.
3. At the resident meeting, there is a vote about the refurbishment plan. It takes a simple majority of the attending tenants to say yes.

There are 3 housing associations they are in different stages of the process.

- SAB: They have voted fall 2016 and the refurbishment starts summer 2017
- B42: All the department that are in the project are supposed to vote in autumn 2016.
- SØBO: They have voted summer 2016 and are almost finished with the refurbishment

6.3.3 Vitoria-Gasteiz case

Owners:

There are 1305 Apartments or Dwellings. From that, there are 1305 owners.

Community of Property owners: 108 communities. Each community has between 4 and 12 apartments.

Administrative Companies: they are small companies each community property has one administrator. They are not relevant in the decision making process.

The decision making process:

The biggest decision unit is in between this 4 and 12 apartments in which the owners 60% of the building owners (a three fifths majority) have to vote yes the building to get refurbished.

6.3.4 Conclusions

Decision making units are very much different in LH City case. In the case of Vitoria-Gasteiz the decision making units are decentralized. Therefore the strategy focuses on working on with actors that help to renew and catalize the engagement process. Sønderborg is in a centralized decision making unit case and Tartu could be in the middle. The strategy depends on the decision making unit typology: decentralized or centralized.



6.4 Conclusions and Evaluation for the 3 LH Cities

6.4.1 Tartu LH CES Model application

Citizen Engagement Strategy Model

Date: 16 01 2017
 Phase: SmartEnCity
 Project: SmartEnCity

<p>WHO Governance</p> <p>To guarantee a smooth and efficient development of the project.</p> <p>Tartu City: Main representatives and Communication Department The University of Tartu</p> <p>Stakeholders: Institute of Baltic Studies, Smart City Lab</p>	<p>MOTOR GROUP Citizen Engagement Working Group</p> <p>To promote and guarantee the Community involvement and citizen engagement</p> <p>Tartu City: Main representatives and Communication Department The University of Tartu</p> <p>Stakeholders: Institute of Baltic Studies, Smart City Lab</p>	<p>PROMOTER GROUP Steering Committee</p> <p>To guarantee a smooth and efficient development of the project.</p> <p>Tartu City: Main representatives and Communication Department The University of Tartu</p> <p>Stakeholders: Institute of Baltic Studies, Smart City Lab</p>	<p>OTHER STAKEHOLDERS They help with engagement and communication processes</p> <p>Administrative companies (companies that manage service/building at SmartEnCity) Building Associations (representatives from each apartment)</p> <p>Stakeholders: Tello, Tella, Estonian Green Movement, KREDEx</p>
<p>WHY Purpose</p> <ul style="list-style-type: none"> The main milestone is to have the required number of houses engaged in the project (majority building association decisions made, technical designers employed and first steps towards renovation made). One strategy through the project and in proactively engaging the target groups is to provide educative programme for them in order to ultimately create a smart community who will be collaborated and empowered in future smart Tartu development. 	<p>HOW Citizen Engagement Strategies definition and Best Practices collection</p> <p>GRADUAL INVOLVEMENT</p> <p>Citizen Engagement Strategy main steps focus on Inform, Consult and Involve. The project has less room for direct collaboration in designing solutions and in empowerment, however, one strategy through the project and in proactively engaging the target groups is to provide educative programme for them in order to ultimately create a smart community who will be more intensively collaborated and empowered in future smart.</p> <p>Besides there is a target group engaging educative programme in order to ultimately create a smart community who will be collaborated and empowered in future smart Tartu development.</p> <ol style="list-style-type: none"> New technology Communicate the benefits of this new technology. Communicate and facilitate means of learning how to use the technology Ensure citizens are knowledgeable and up to date and can use this new technology. 	<p>WHAT Value Proposition</p> <p>PRODUCT SERVICE SYSTEM</p> <p>Products:</p> <ul style="list-style-type: none"> House energy refurbishment: Your life quality and comfort will increase, your electricity and household bills will reduce, the value of the property will increase and it will be very good for the environment. You will save approximately 80% on the heating bills. <p>Price: Not defined yet. The price will change between already renovated houses and who have not done.</p> <p>Financing: The house owners need to cover the own financing, which is approximately 20% of the total renovation cost. Houses will need to take out additional loans to cover own financing.</p> <p>Payback: The investment will be returned within 7 to 10 years, on average.</p> <p>EDUCATION</p> <p>Monitoring systems: Citizens and developers will learn how to use and create the new smart home tools and reduce their consumption</p>	<p>WHAT Communication: Activities, Materials and Channels</p> <p>CONTINUUM PRESENCE</p> <p>Channels: www.tartu.ee website, https://www.facebook.com/tartutaru/ Facebook page</p> <p>Events and meetings: House Associations meetings, General Assembly with pilot area Residents, Informal tea evenings for pilot area Residents, Lecture series...</p> <p>Leaflets and flyers: Project flyers in all pilot area mailboxes, notification posters...</p>
<p>WHOM Segments and Target Group</p> <p>Municipality</p> <p>Administrative companies</p> <p>Building Associations</p> <p>Owners</p> <p>Lead Users</p>	<p>WHOM Segments and Target Group</p> <p>Municipality</p> <p>Administrative companies</p> <p>Building Associations</p> <p>Owners</p> <p>Lead Users</p>	<p>WHAT Reshaping Value Proposition</p> <p>FEEDBACK</p> <p>UNDERSTABLE MESSAGES</p> <p>Pilot area residents in Tartu have different channels to give feedback for the SmartEnCity management team: local project website tartu.ee has a specific section for feedback and forum, local Facebook page Tartu/Smart Tartu and direct contacts with the project manager and experts are distributed widely.</p>	<p>WHERE Spaces: Real and Virtual</p> <p>REAL</p> <p>Spaces: Tartu City Office or TREA Office (general questions), houses (individual house association meetings), Tartu University Library, Demo building: Plan for turning Lutsu 16 into a demo building</p> <p>Smart meters: 800-900 will be installed</p> <p>VIRTUAL</p> <p>Web: Tartu.ee web, Facebook page</p>
<p>CHARACTERISTICS OF THE TARGET GROUP</p> <p>Owners:</p> <ul style="list-style-type: none"> The majority of the residents are within the 20-39 age demographic, with a more or less even distribution of men and women within that demographic. Overall, however, the women outnumber the men (2020 women and 1450 men). The education level of the residents. Secondary education or below=570, High school education and vocation=1370 and Higher education=1220, N/A=30. This shows a demographic of mostly young and middle aged people, the majority of whom have at least a high school or vocational educational. 			



6.4.3 Vitoria-Gasteiz LH CES Model application

Citizen Engagement Strategy Model

Project: SmartEnCity

Phase: 16

Date: 01 2017

WHO Governance

PROMOTER GROUP
Coronación Steering Committee (CSC)
To guarantee a smooth and efficient development of the project.

MOTOR GROUP
Communication and Citizen Engagement Committee (CCPC)
To promote and guarantee the Community involvement and citizen engagement

WHY Purpose

Vitoria-Gasteiz advocates transforming the city into environmental issues and promoting the transition from the European Green City to the CO2 neutral city.

In addition, Vitoria-Gasteiz aims to renovate various neighborhoods of the city. For this, the district of Coronación is a first pilot:

- Reduce the energy demand of the neighborhood and the use of renewable energy in substitution of fossil fuels.
- Improve housing habitability and improve comfort.
- Save on heating and domestic hot water (DHW).
- Integrate the engagement of neighbors in the definition of the project.
- Sustainable urban mobility

WHOM Key Actors and Roles

FORMAL LEADERSHIP

Interlocutors: Ensañchez21; Refurbishment Agency

Associations:

- Some associations and institutions located in the neighbourhood help in the dissemination of the SmartEnCity project.

INFORMAL LEADERSHIP

Lead User Program:

- First with 15 families
- After with followers.

HOW Citizen Engagement Strategies definition and Best Practices collection

GRADUAL INVOLVEMENT

The process consists on increasing the level of impact of the citizens in the proposal. As you know we started with the **Information Strategy** followed with a **Consultation** for the District Renovation and now are pivoting to the **Involve** phase.

Due to the lack of a House Associations, new alliances with new key agents and lead user capturing and attracting strategy are needed. The idea is to make interviews with all the community property of owners (108) and detect the potential lead users.

- Make a dissemination of the SmartEnCity project based on big events where the neighbourhood is invited through with the help of the existing association network and public services.
- New alliance with new key agents from the Vitoria City Council, Ensañchez21 Refurbish Agency. This agent can help in the pre-commercial process. This consists on contacting the Pilot Area focused residents with most of the information of the Value Proposal. This give the possibility to contrast and validate some parts of the proposal with them.
- Attract a small number of lead users, 15 people. The 15 people will take part in a program. On this program is focused successfully, they will be able to capture and attract more interested people.
- Spread the experience of the 15 lead users to other people of the target group which will be named 'followers'.

WHAT Value Proposition

PRODUCT SERVICE SYSTEM

Products:

- House energy refurbishment: Includes insulation, new low energy windows and doors, installation of ventilation systems with heat recovery, among other measures which will significantly drop the energy demand of buildings.
- District Heating:** As part of the intervention the neighbours must change from individual heating systems to the district heating system.

Price:

- The proposed cost is 21.000 EUR on average grants, is 9.600 EUR on average.

Payback:

- Payback period is about 30 years. Recovering the investment from the savings on the operation and taxes on the buildings.

EDUCATION

Energy reduction program:

- The 15 lead user education program during 2017. Educational aspects related to renewal energy use, energy saving and life quality increase.

WHAT Communication: Activities, Materials and Channels

CONTINUUM PRESENCE

Events:

- SmartEnCity Informative event (350 assistants)
- District renovation information (175 assistants)

Exhibitions:

- District renovation exhibition & consultation.
- House refurbishing options exhibition.

Leaflets: 108 Community property of owners.

WHAT Value Proposition

FEEDBACK
Reshaping Value Proposition

UNDERSTABLE MESSAGES

- Realize questions about the project and solve some of the doubts in events.
- Propose ideas or post-complaints about District Renovation proposals.
- The owners could express doubts about the building retrofiting project and resolve some doubts.
- They could know more concrete features about building retrofiting and ask relevant questions.

WHERE Spaces: Real and Virtual

REAL

Spaces: Europa Palace (350), District Civic Centre (200), Association house (40), Citizen Offices (20)

Demo building: Not yet

Smart meters: 500-600 will be installed

VIRTUAL

Web: Vitoria-Gasteiz: www.vitoria-gasteiz.org

Platform: Not yet

WHOM Segments and Target Group

NEIGHBOURHOOD ORGANIZATIONAL SYSTEM

Municipality	1	Neighbourhood	1	Community of Property Owners	108	Owners	1305	Lead Users	15
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CHARACTERISTICS OF THE TARGET GROUP

Owners:

- In the case of Vitoria, the refurbishing will be offered to private owners. The owners are the ones that are making the investment for the refurbish.
- Total amount of community property of owners in the intervention zone is 108 communities. Each community property of owners is composed from 4 to 12 apartments. The total of dwellings is 1305.
- In 48 of the community property of owners the population is older than 65 years old. Regarding relation in between community property of owners and foreign nationality people, 6 communities have more than 55% and 22 have in between 30 and 55%.

WHO Governance

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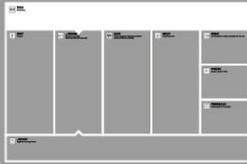
6.4.4 Creation of subcategories under the Key Areas

After the application of the CES Model with each LH City reality a subdivision has been created in each Key Area. Following subareas were created per Key Area. The elements that are identified bellow should be present in the citizen engagement strategies:



WHO

Governance



Promoter Group: Steering Committee: guarantee a smooth and efficient development of the projects value proposals.

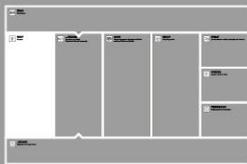
Motor Group: Communication and Citizen Engagement Committee. To promote and guarantee the Community involvement and citizen engagement

Neighbourhood Node: Structured organizations connected to neighbourhood. To help in the dissemination of the Value Proposition



WHY

Purpose



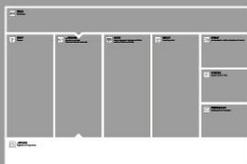
Transition to CO₂ neutral city: Educational program or similar.

District Renovation Pilot: Inclusion of the user perspective in the value proposal development.



TO WHOM

Segments and Target Group



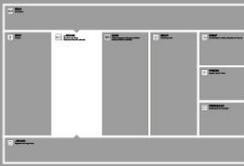
Neighbourhood Organizational System: should be clear to understand the decision making processes

Characteristics of the Target Group: strategies depending the demographic structure specially when the aim is introducing smart technologies.



WITH WHOM

Key Actors and Roles
Formal and Informal Leadership



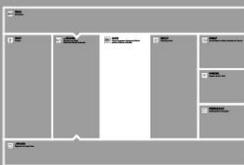
Formal Leadership: Actors that act as interlocutors whether permanent or eventually depending on the case. And Neighbourhood nodes as House Associations.

Informal Leadership: If there are scheduled programs for lead users or early Innovators.



HOW

Citizen Engagement Strategies definition
and Best Practises collection



Scheme of a **Gradual Involvement** of people for the educational program and in the value proposal definition should be present.



WHAT

Value Proposition



Product Service System: should be defined, price and payback included.

Educational: energy reduction and monitoring system familiarisation programs should be included.



WHAT

Communication: Activities, Materials and Channels



The **Continuous Off-Online Communication activities** as events, lectures, meetings, platform/web, Facebook, local media that correspond to a project story through a good script.



WHERE

Spaces: Real and Virtual



Places where the project can be **Connected Physically** and **Digitally** with with (demo building, smart meters, platforms and webs).



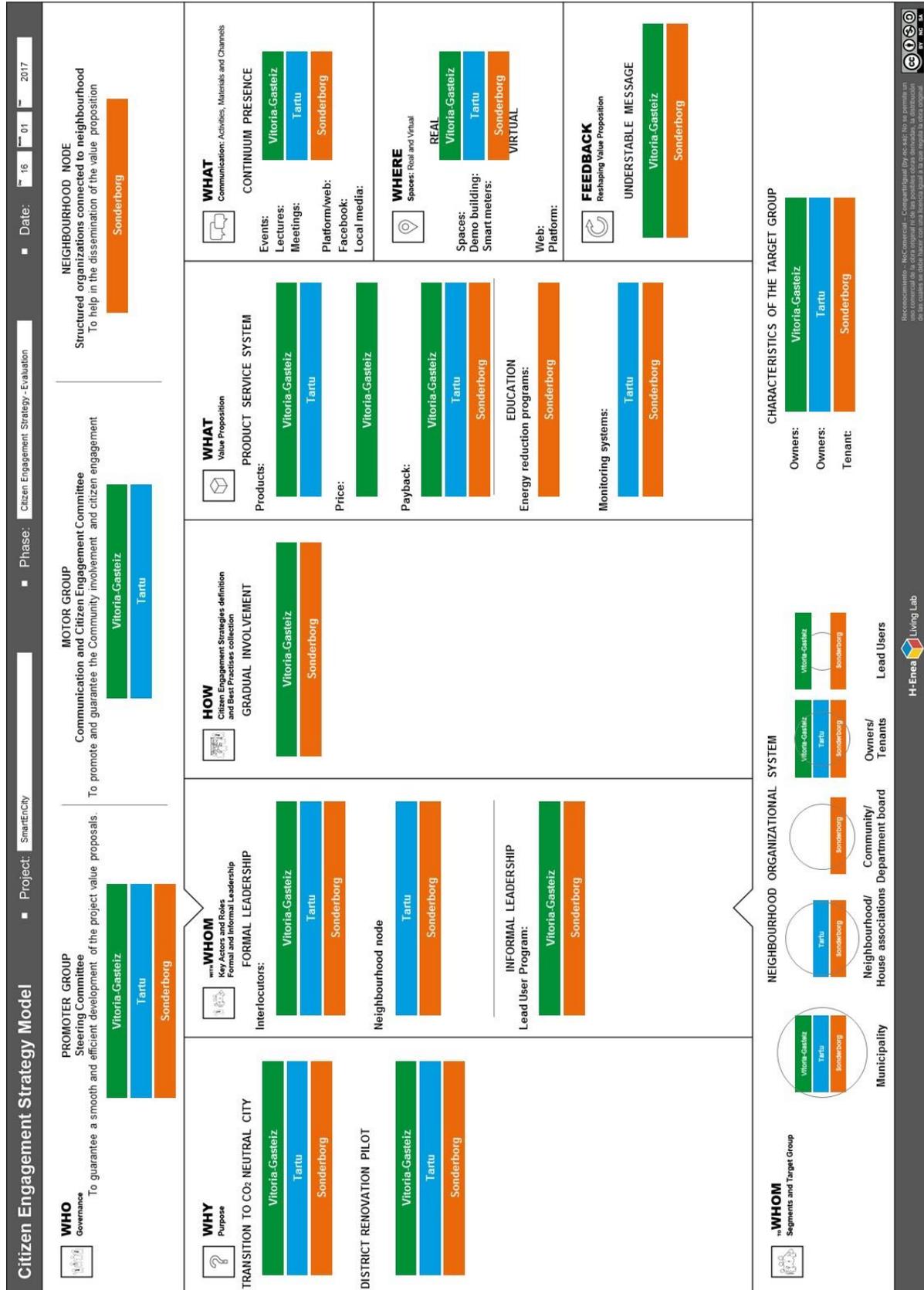
FEEDBACK

Reshaping Value Proposition



Understandable Messages and **Contents** are most of the time a product of different feedbacks also from users and citizens. Is there a Feedback Culture?

The following Map evaluates the presence of each of the above mentioned elements in each LH City. This exercise has been developed during the first year of the SmartEnCity project, year 2016, which has been mostly centred in the District Renovation and Refurbishing Area value proposal.



6.4.5 Evaluation



WHO

Governance



Promoter Group: Steering Committee. The three Cities complete this area. In the case of Sønderborg there are no companies or representatives that are developing the value proposal. This can be positive because the Steering Committee is smaller. In any case there is not much information about the product as it will be seen. In the cases of Vitoria-Gasteiz and Tartu, on the contrary, the Governance of the citizen strategy is controlled by too many companies and institutions which can bring it to loose efficiency.

Motor Group: Communication and Citizen Engagement Committee. Is present in the 3 LH cases.

Neighbourhood Node: The unique House Association that can influence in the decision making is Sønderborg.



WHY

Purpose



Transition to CO₂ neutral city: Educational program is clear in the 3 LH Cities.

District Renovation Pilot: is clear in the 3 LH Cities.



TO WHOM

Segments and Target Group



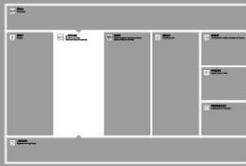
Neighbourhood Organizational System: Sønderborg has a very concentrated node and Tartu is in the middle with structures that are at the same time de-structured and in the end the decision making relies in the owner. Anyhow they have permanent interlocutors which facilitates the engagement work. The case of Vitoria-Gasteiz is a completely de-structured node.

Characteristics of the Target Group: Sønderborg and Vitoria-Gasteiz,s demographic structures are older. This means that they are not so open to “new things”. The effort to convince them is much bigger. Tartu has a young structure and new discoveries around use of the smart technologies can come up from the engagement and research work.



WITH WHOM

Key Actors and Roles
Formal and Informal Leadership



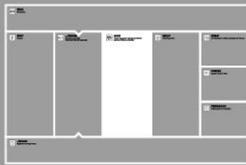
Formal Leadership: Actors that act as interlocutors are permanent in the case of Sonderborg and Tartu. In the case of Vitoria-Gasteiz they change depending on the stage of the process because there is no House Association.

Informal Leadership: The role of the lead users is different in Vitoria-Gasteiz than in the other cases. In Vitoria-Gasteiz lead users will also disseminate refurbish product features and advantages. The lead users' roles of Tartu and Sonderborg are more centred in educational programs for the energy consumption and CO₂ emissions reduction.



HOW

Citizen Engagement Strategies definition
and Best Practises collection

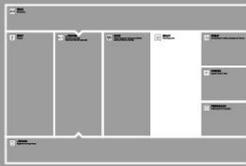


Scheme of a **Gradual Involvement** is more present in the Sonderborg and Vitoria-Gasteiz's Model.



WHAT

Value Proposition



Product Service System: Product characteristics price and payback are not included in the Sonderborg,s case. Is not clear if the rent of the owners is increasing due to the refurbishment. In that case payback is fundamental information. In the case of Tartu, there also some product features including price that should also be defined.

Educational: energy reduction programs are very well defined in the Sondenborg LH model. The monitoring is also integrated in their energy reduction program. This helps user to understand the project motivations. Even the model can not be replicated 100% it should be an inspiration for the rest of the LH Cities and Follower Cities.



WHAT

Communication: Activities, Materials and Channels



There are **Continuous Off-Online Communication activities** in the three cities. Sonderborg has an interesting strategy per target groups which is not so clear in the rest of the LH Cities. Anyhow there is still time to clarify this segmentation strategy in-between the Steering Committees and Communication Motor groups of each City.



WHERE

Spaces: Real and Virtual



Places **Connected Physically** and **Digitally** to the project. Demo building would be interesting as clear example of the advantages in each of the Cities. This is a strategy that is proved in refurbishment success cases. Many smart meters are to be installed in the case of Tartu and Vitoria-Gasteiz. Many factors are to be taken in account to avoid problems with the users.



FEEDBACK

Reshaping Value Proposition



Understandable Messages and **Contents** Vitoria-Gasteiz and Sonderborg have both expressed a Feedback Culture in their way of implementing not only messages and contents but also educative programs for further dissemination in the target groups.

6.5 Recommendations for the Follower Cities or other Replication Models

There is no unique receipt for Citizen Engagement Strategies. The design must be adapted to each reality. The CES Model is an open frame that helps you to start and develop a process that is divided in Key Areas that work independently and interdependently. Your initial conditions are the basis from which you can go forward. The first question is:

“Which are the initial conditions of the process in my City in the different the Key Areas?” We can identify our initial situation answering several questions per Key Area:



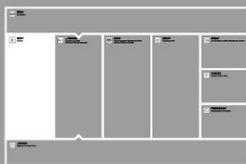
WHO
Governance



The biggest the Steering Committee is (number of people) the less operative can be the work. Effectiveness is crucial in processes where the citizens (the target groups the value proposal focuses on) take part. The information delivery to the Target Groups should be constant and coherent. This requirement is specially challenging in the initial phase of the project where there is not much defined content about the value proposal. The recommendation is to create a group that works specially on Communication and Engagement issues (with one or two members from the Steering Committee).



WHY
Purpose



If there are previous activities connected to the why and these are isolated activities, or the actors that took part in that implementation are not part of the project now, any information about their experience could be helpful.

- “Were there previous house refurbishing and home energy emission reduction best practices in the City?”
- “Were there any previous important activities about the home emission reduction? Till which extend could they be connected to the actual project?”



TO WHOM

Segments and Target Group

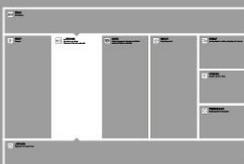


The message content changes depending on the culture and demographic structure. Also the CO₂ emissions reduction education program changes, specially in aspects related to smart technologies. LH Vitoria-Gasteiz and LH Sonderborg have an older population target group than LH Tartu. “Which is the socioeconomic profile of the Target Group?”



WITH WHOM

Key Actors and Roles
Formal and Informal Leadership



Actors and Roles:

- Is there a House Association in the Neighbourhood?
- Which are the refurbishing decision making units in the neighbourhood?

Formal Leadership:

The reason of creating a section with the neighbourhood organizational systems in the LH Cities responds to the need of making a comparison in between the 3 LH realities. The existence or not of a House Association changes the strategy. Each LH City responds to a different reality.

- Which of the LH realities suits more with the City reality?

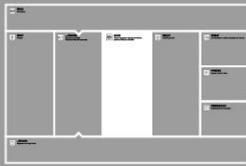
Informal Leadership:

- Which is the group of people that will be engaged to catalyse the engagement process?”
- How will they be engaged and how many?
- For what purpose? To reinforce the capacity building and education of the people on carbon emission reduction or/and to reinforce the process of engaging people for the house refurbishing?

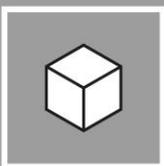


HOW

Citizen Engagement Strategies definition and Best Practises collection

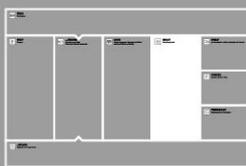


The strategy should be developed depending on the context and needs. Checking the Key Areas of each of the LH Cities independently identifying the similarities can help to make the first drawing. Design a strategy that adapts to the own reality depending on the target group, decision making units, key actors and roles (formal and potential informal) and the value proposal that will be offered.



WHAT

Value Proposition



Value proposal development process has different stages, especially at the beginning of the project. If the idea is to open a relation with the potential customers from the beginning, to attract, for example, lead users. This follows more the Vitoria-Gasteiz LH model. In the LH Sonderborg case, the CO₂ emission reduction program is the core of the value proposition where the Value Proposal specifications are defined with the House Associations managers and engineering company.



WHAT

Communication: Activities, Materials and Channels

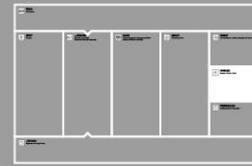


Please check the 3 LH strategies in this Key Area, any of them can help to deploy a communication plan. Regarding the channels, as webs, sometimes existing ones are used sometimes new ones are generated.



WHERE

Spaces: Real and Virtual

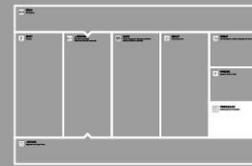


Please check the 3 LH strategies in this Key Area.



FEEDBACK

Reshaping Value Proposition



A feedback culture promotion is always recommended check Feedback Area of the 3 LH Cities.

7 Deviations to the plan

7.1 Citizen Engagement Strategies

No major deviations have occurred.

7.2 Social Innovation Model

No major deviations have occurred.



8 Contributions for other WPs

8.1 Key Performance WP7

In the D.7.3 Evaluation Protocols, in the SmartEnCity Evaluation approach section of such deliverable, the following Key Performance Index list are presented:

For the citizen engagement assessment protocol:

- Number of well-informed Citizens
- Number of well consulted Residents
- Number of residents who felt involved in the decisions
- Number of dwellings retrofitted
- Number of buildings connected to the District Heating
- Number of residents benefited by the intervention
- Number of residents who were against the project

For the economic performance protocol:

- Resident cost “RC”
- Total annual cost “TAC”
- Total annual benefits for residents “BF”
- Cost saving rate “CRR”
- Net present value for resident “NPV”
- Payback for resident “PB”

So, these indexes are supposed to measure the SmartEnCity project performance with regard to the citizen engagement and the building retrofitting and neighbourhood regeneration (at this extend we are not considering mobility or other action Key Performance Indexes at this section).

Connecting the above-mentioned contributions with the outcome of this deliverable, the CES Model, it is strongly believed that another jump in hybridisation could be made in this project. As mentioned linking the above mentioned Key Performance Indexes with their most related Key Areas (Governance Key Area, Purpose Key Area, Key Actors and Roles Key Area, Citizen Engagement Strategy Definition Key Area, Value proposition Key Area, Segment and Target Groups Key Area, Communication Key Area, Spaces Key Area, Feedback Key Area) could deliver a dynamic and ongoing scoreboard of the project. Besides new relevant Key Performance Indexes could be discovered along this process.

8.2 Monitoring and Evaluation WP7

The user experience of the SmartEnCity project should be integrated with monitoring and evaluation aspects. This means that the citizen should have a clear idea of the relation in between the general purpose and its relation with the installation of the smart meters in their homes. Each LH City Monitoring Motor Group, if existing, should have a clear vision of what and how must be communicated to the citizens in this case. This could be related with the education programs. The CES Model could be a nice tool/methodology to design and integrated experience.



8.3 Value Proposition (potential for WP3, WP4 and WP5)

Regarding the Value Proposition Key Area, a Map of concepts related to Life quality should be developed. This conceptual Map should integrate concepts related to the advantages of the refurbishment in people's lives. These concepts should be the key to develop communication content for the Target Groups. Socioeconomic aspects as well as gender and other should be taken in account in the Map development.

8.4 Integrated Planning WP2

About Integrated planning, subtask 2.6, CES Model Methodology could be re-applied for follower Cities to detect gaps and focus properly the next activities and avoid duplication (subtask 2.6.1). Beyond that again CES Model could be of important help when designing a participative foresight methodology and connect it to other European Smart Cities activities related with citizen engagement.

8.5 Replication Model WP8

Another clear potential area of development to apply the CES Model could be the expanding of the Smart Cities Network (WP 8 Replication to Followers and Smart Cities Network). Generating a common language and educating in practices carried out by the LH Cities could be a good entrance to engage other Cities in to this Smart Cities Network. The re-applying of the CES Model could potentially deliver a nice replication toolkit and help in the methodology.

9 Annexes

9.1 Annex 1: Questionnaires

First Questionnaire

- a) How do you align the citizen engagement strategy in your City?
- b) Are you creating a story of your project? Which is the story for the project that you created?
- c) In which of the value proposals (refurbishing, mobility) are you putting more effort at the beginning of the project?
- d) Which is your neighbourhood context. A brief description (district renovation area)
- e) How do you define the Citizen Engagement and integrate it with the Communication and participation?
- f) The refurbishing target group are owners or tenants?
- g) You are changing the District Heating to a renewable energy system?
- h) Which stakeholders are be involved in the communication plan?
- i) What is your project context today and how can communication can help to engage citizens?
- j) Which are the channels from the Stakeholders that can help you to develop the plan?
- k) Which are the touch-points (leaflets, digital content) are you developing to communicate the project?
- l) Which is the team which is working on this tasks?



Second Questionnaire:

a) District renovation citizen engagement strategy 2016 (How)

a.1 Which is your milestone for the end of 2016?

a.2 Please see the IAP2 diagram⁴³ below. If you would have to explain your SmartEnCity Citizen Engagement Strategy for the District Renovation (Refurbish) during the 2016 in 3 steps which would it be?

a.3 How many success cases of District and House Renovation Projects with more than 250 owners/renting during the same period of time did you or your SmartEnCity coordination team managed under a European Funding Scheme? How many best practices do you have?

a.4 If yes which where your learnings and which are your recommendations?

a.5 If not did you made a collection of Best Practices in your country or other countries? Can you share them with us? (name, link in the web). If not do you think it can help?

b) Key Actors and Roles

b.1 Is there a House Association in your project?

b.2 How many houses represent each association?

b.3 Which is the amount of the houses that are scheduled to be refurbished?

b.4 How are you developing the process of involving the houses during the project? Is it a step by step process convincing small number of people and then refurbishing step by step or making a strategy for the whole?

b.5 Is there and Representative Board or similar in the House Association or similar that will represent the whole group or houses? How many representatives are in this Board? Where they selected for this Refurbishing process or were official members of the board before the SmartEnCity project started?

b.6 Did you detect “lead users” out of the Representative Board?

b.7 Which is your role in the process?

b.8 Which is the role of the House Association? b.9 Did you figure out a unique interlocutor that attends the questions of the citizens regarding the offered service product solution? From which organisation would she or he be? Explain reasons.

b.10 Which Key Agent will be involved in the detection of cases of houses that cannot afford economically the refurbishment?

43

http://c.ymcdn.com/sites/www.iap2.org/resource/resmgr/Foundations_Course/IAP2_P2_Spectrum.pdf?hhSearchTerms=%22spectrum%22



c) Target Groups:

c.1 Which is the the scope of the Citizen Engagement process in your Lighthouse City?

c.2 Which are the Intervention District Characteristics?

c.3 Which are the District/s Intervention Area Socioeconomic Characteristics?

d) Activities, developed materials and channels for the citizen calls

d.1 Which is the material you are using and developing to communicate the SmartEnCity project to the Citizens directly involved in the District Renovation Process (Refurbish)? Leaflets, panels or others (please specify). Here the media publications are not relevant. In case you did not develop leaflets or similar please explain why.

d.2 How many leaflets and panels you developed for each step of the strategy?

d.3 How many events took place and are taking place during the 2016?

d.4 Is there any Web Page where you publish the information you are using for the direct contact with the Citizens that are involved in the District Renovation in the SmartEnCity (leaflets or others)?

d.5 Are you uploading the leaflets and panels in the Web? Which Web? Could you specify us the link?

d.6 Which organisation or which team is curating the content of the materials that are delivered to the Citizens?

d.7 Which channels do you use to invite Citizens to the meetings and events?

e) Value Proposition (What)

e.1 Do you have a proposal with a description of the value preposition for the citizen? If yes, please share it with us?

e.2 Did you share it with the Citizens? If not when are you doing it?

e.3 Do you have a final price of the Refurbishment yet? If not, why?

e.4 Do you have a per month amount per house? How much is it?

e.5 Do you have a final price for the final cost per house on the energy system renovation?

e.6 Which is the average heating consumption of a house per year in heating?

e.7 The amount that was initially fixed has increased in the last months? Why?

e.8 Financing model for the house owners under cash difficulties are already defined? If not which are the barriers and when do you think you will have it?

f) Governance (Who)

- f.1 Which is the list of Stakeholders that is defining the Citizen Engagement process for the House Renovation in in your City?
- f.2 Is there a Public Private combination of Stakeholders?
- f.3 How do you align your Citizen Engagement Strategies for the House Renovation?
- f.4 Who is/ are in charge of proposing a Citizen Engagement Strategy for the House Renovation? Why?
- f.5 Is there a House Association representing the house owners or locators?
- f.6 Is there a House Association representing the house owners or locators?
- f.7 Who validates the Citizen Engagement Strategy for the House Renovation?
- f.8 Who signs the house renovation contract together with the citizen?
- f.9 The company in charge of executing the Renovation and closing the final prices for the refurbishment takes part in the Stakeholder meetings?

g) Spaces (Where)

- g.1 Is there any specific space, office where people can visit and ask about the Refurbishment proposal? If not is there any place in prevision? Why?
- g.2 Who is attending this office?
- g.3 Is there any concrete place where meetings with house owners take place? Which is the general use of this space?
- g.4 Do you find the Web as a touch point or space where citizens can interact usefully in the house owner engagement process?

h) Purpose (Why)

- h.1 Which is/are the purposes of the SmartEnCity Citizen Engagement Strategy in your City?

i) Reshaping Value Proposition (Feedback)

- i.1 Do you implement the user inputs in your value proposal? How do you integrate the user perspective during the process?



Third questionnaire

Citizen Engagement Strategy 2016 (How)

- Sondergorg:
 - a.1 After the 30 family program how do you scale from 30 families to the rest of 807 apartments?

Key Actors and Roles

- Tartu:
 - c.1 There will be more information about the Lead User Program in the 15th of December 2016 document?
- Vitoria-Gasteiz:
 - c.2 Which is the plan to further engage and work with potential “lead users”? Is there any training, tools or materials being provided to them (for example, energy & comfort monitoring equipment for their homes)?

Target Groups:

- Tartu:
 - d.1 When will be this information available for example the number of rented and owned apartments and will also gauge people’s general attitudes towards the goals of SmartEnCity and refurbishment activities
 - d.2 Which percent of the building association should say yes in order to get the building refurbished?
 - d.3 How many owners are in total in the 20-21 buildings that will be refurbished?
 - d.4 Who pays the tenant to, they pay an owner or they pay the Housing Association as public service? Or is it a private service?
 - d.5 The decisions makers are owners or tenants?
 - d.6 How much do you expect that the residents will save per year with the refurbishment? In how many years they will get the investment returned?
- Sonderborg
 - d.5 How many Department Boards are there per House Association?
 - d.6 How many building blocks are per Department Board?
 - d.7 did the House Associations vote for the Refurbishment yet? Please share the results. If they did not vote, when are they doing it?
 - d.8 How is this decision made? Which is the process? How many people of the building block should say yes to refurbish a building block?



- Vitoria-Gasteiz:
 - d.9 How many apartments are in each building?
 - d.10 How many apartments are in each community property of owners?
 - d.11 Which percentage of the apartment should say yes in order to get the building refurbished?
 - d.12 The decision makers, are they owners or tenants?

Activities, developed materials and channels for the citizen calls

- Sonderborg:
 - e.1 How many Smart meters are you installing in each House Association? When?
 - e.2 How many Smart meters are you installing totally?
 - e.3 How are you doing these? (Concerning the Communication Plan)
 - e.4 A brief description of activities of the Communication Plan please

Value Proposition (What)

- Tartu:
 - e.1 How much do you expect that the residents will save per year with the refurbishment?
 - e.2 In how many years they will get the investment returned?
 - e.3 can see more information about the Education Program?
- Sonderborg:
 - e.4 Are you co-developing an Energy Reduction Strategy Program with the House Association Managements?
 - e.5 Which is the plan to further engage and work with potential “lead users” ? Is there any training , tools or materials being provided to them (eg. energy & comfort monitoring equipment for their homes) ?
 - e.6 Which is in average of electric consumption reduction that can be achieved per family after the program? Which is the average heating consumption reduction that can be achieved after the program?
 - e.7 Are you going to monitor the house energy consumptions before and after the Refurbishment?
 - e.8 There is more detailed info about the Refurbishment? Type of insulation, type of windows and doors and ventilation systems (heat recovery) or this is open yet?
 - e.9: When the rent increase will be compensated in through the reduction of the heating consumption? How many years?
- Vitoria-Gasteiz:
 - e.10 Which is the average investment return for the Owners?



Governance (Who)

- Tartu:
 - f.1 Governance and Steering Committee has the same functions?

Spaces (Where)

- Tartu:
 - g.1 when are you installing the first smart meters and connecting them to the house energy management application?
 - g.2 Are you installing the smart meters before and after the refurbish?
 - g.3 How many people do you expect for this smart metering group?
 - g.4 Are there any plans for a “demo building”, and any incentives for those willing to become part of this first demo? If positive, what is the intended use and planned activities with the demo building?
- Sonderborg:
 - g.5 How many Smart meters are you installing in each House Association? When?
 - g.6 How many Smart meters are you installing totally?
 - g.7 Are there any plans for a “demo building”, and any incentives for those willing to become part of this first demo? If positive, what is the intended use and planned activities with the demo building?
 - g.8 Is it a Demo with a Refurbished House scheduled as milestone in your Strategy 2017?
- Vitoria-Gasteiz:
 - g.9 How many Smart meters are you installing in the District?
 - g.10 Are there any plans for a “demo building”, and any incentives for those willing to become part of this first demo? If positive, what is the intended use and planned activities with the demo building?

Purpose (Why)

- Vitoria-Gasteiz:
 - h.1 Are there any additional goals related to the CO₂ emissions reduction? For example educative programs.

Reshaping Value Proposition (Feedback)



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